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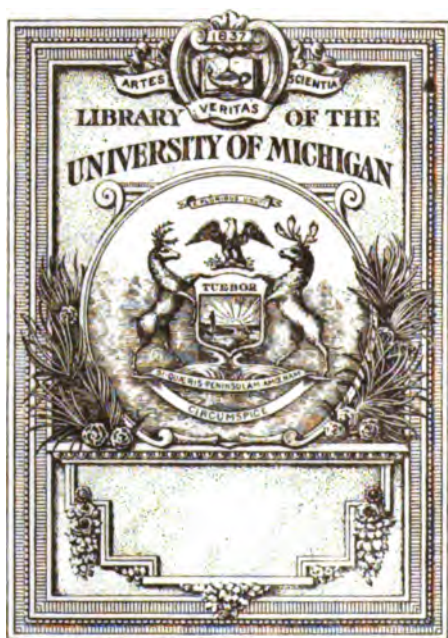
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6316

GRADUATE SCHOOL
OF
YALE UNIVERSITY

COURSES OF INSTRUCTION

FOR

1899-1900



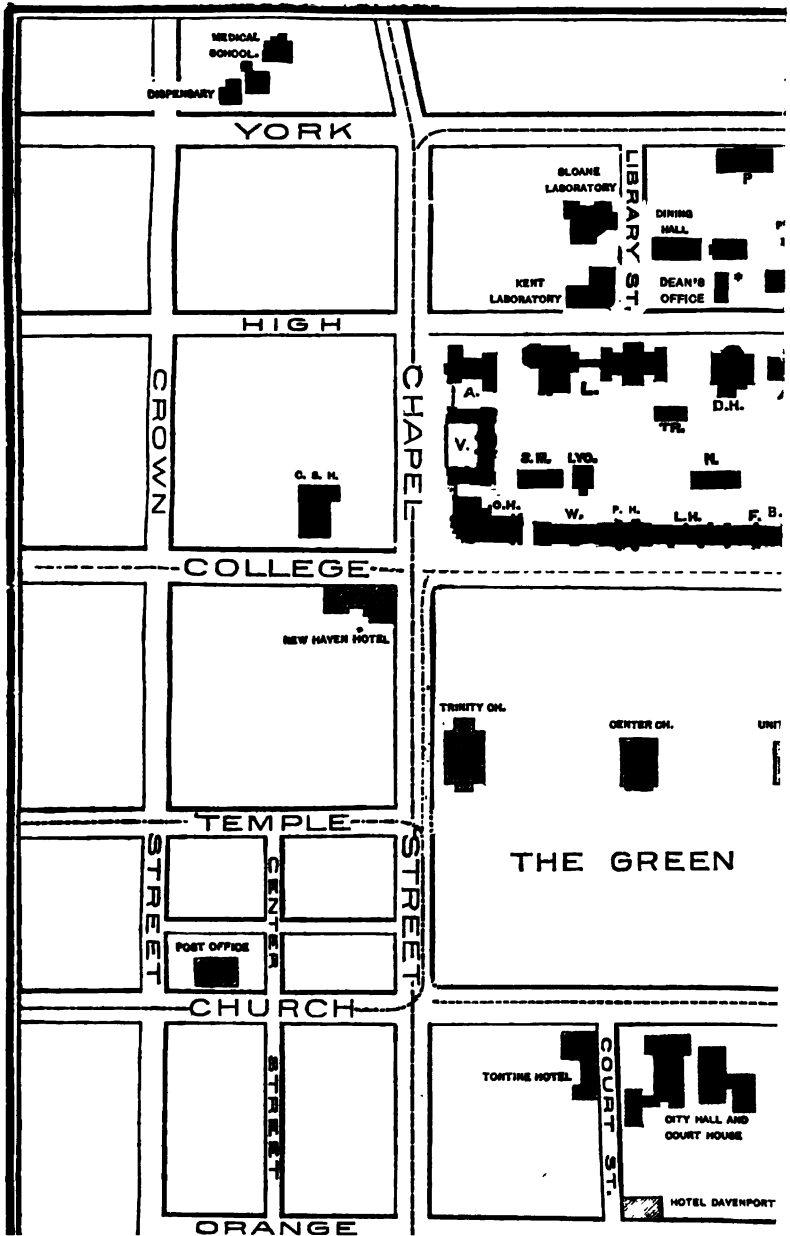
NEW HAVEN:

1899

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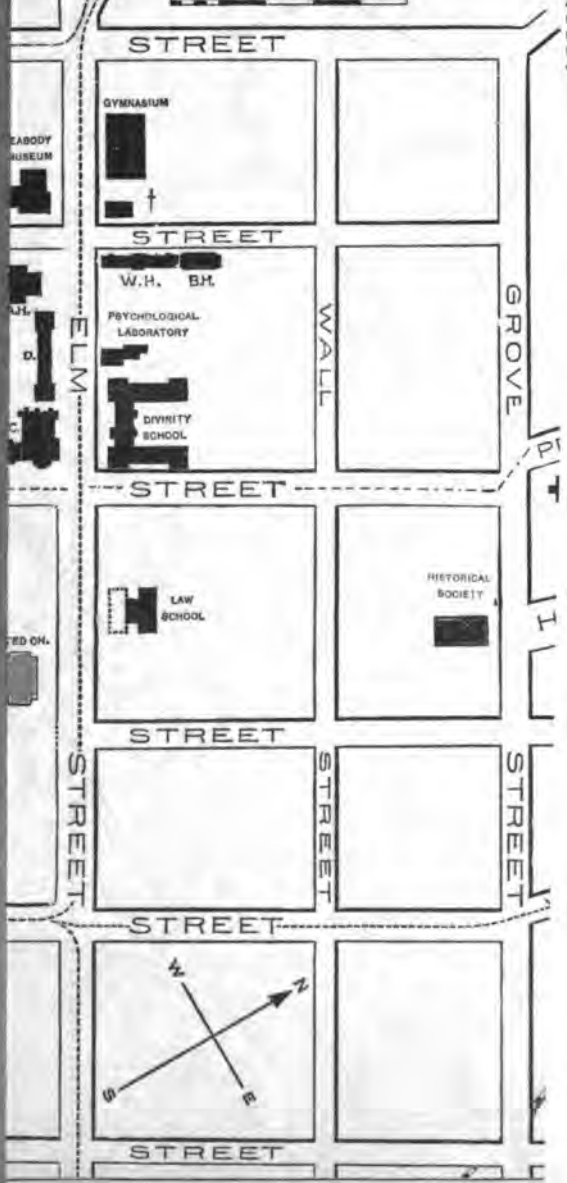
LOCATION OF THE



YALE UNIVERSITY BUILDINGS.

Scale, 1 in. = 400 ft.

100 50 0 100 200 300 400



GRADUATE SCHOOL
OF
YALE UNIVERSITY

-- ✻ --
COURSES OF INSTRUCTION

FOR
1899-1900



NEW HAVEN:
1899

CALENDAR

1899

- 28 Sept. Thursday FIRST TERM begins.
29 Nov. Wednesday THANKSGIVING RECESS begins, 1.20 P. M.
1 Dec. Friday RECESS ends, 8 A. M.
20 Dec. Wednesday FIRST TERM ends.

Winter Vacation

1900

- 9 Jan. Tuesday SECOND TERM begins.
11 April Wednesday SPRING RECESS begins, 1.20 P. M.
19 April Thursday RECESS ends, 8 A. M.
16 May Wednesday Anniversary of the Divinity School.
29 May Tuesday School of the Fine Arts, term ends.
24 June Sunday Baccalaureate Sermon.
27 June Wednesday COMMENCEMENT.

Summer Vacation

- 27 Sept. Thursday FIRST TERM begins.
19 Dec. Wednesday FIRST TERM ends.
-

For information with regard to the Graduate School, not contained in this pamphlet, and also with regard to Fellowships and Scholarships (see page 14), address the Dean,

Professor ANDREW W. PHILLIPS.

GRADUATE SCHOOL

FACULTY

REV. TIMOTHY DWIGHT, D.D., LL.D., PRESIDENT
REV. JAMES M. HOPPIN, D.D., *Professor of the History of Art*
EDWARD J. PHELPS, LL.D., *Professor of Law*
WILLIAM H. BREWER, PH.D., *Professor of Agriculture*
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JAMES PIERPONT, PH.D., *Professor of Mathematics*

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REV. EDWARD L. CURTIS, PH.D., D.D., *Professor of Hebrew*

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T. WOOLSEY HEERMANCE, PH.D., *Tutor in Greek*

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FRANK H. CHASE, PH.D., *Tutor in English*

EDWARD B. REED, PH.D., *Tutor in English*

WILLIAM B. BAILEY, PH.D., *Instructor in Statistics*

GERVASE GREEN, PH.D., *Instructor in Philosophy and Pedagogy*

MEYER WOLODARSKY, PH.B., *Instructor in Rabbinical Literature*

JOHN M. GAINES, B.A., *Assistant in Political Economy*

HERBERT E. HAWKES, B.A., *Instructor in Mathematics*

HERBERT E. GREGORY, B.A., *Instructor in Physical Geography*

ADMINISTRATIVE COMMITTEE,

WITH CONSULTATION HOURS

REV. TIMOTHY DWIGHT, D.D., LL.D., PRESIDENT,

Room 7, Treasury Building, daily, 10.30 A. M. to 12 M.

ANDREW W. PHILLIPS, PH.D., DEAN, and *Professor of Mathematics*,
90 High street, daily, except Saturday, 2.30 to 4 P. M.

ARTHUR M. WHEELER, LL.D., *Professor of History*,

C, Osborn Hall, Monday and Friday, 10.30 A. M. to 12.30 P. M.

CHARLES B. RICHARDS, M.A., *Professor of Mechanical Engineering*,
112 Winchester Hall, 9 A. M. to 12 M., Wednesday and Saturday.

REV. GEORGE T. LADD, D.D., LL.D., *Professor of Philosophy*,

275 Lawrance Hall, Wednesday and Saturday, 10 to 11 A. M.

THOMAS D. SEYMOUR, LL.D., *Professor of Greek*,

22 Phelps Hall, daily, 11 A. M. to 12 M.

ALBERT S. COOK, PH.D., L.H.D., *Professor of English*,

219 Bishop street, daily, 2 P. M.

HENRY W. FARNAM, R.P.D., *Professor of Political Economy*,

43 Hillhouse av., daily, 2 to 3 P. M.

RUSSELL H. CHITTENDEN, PH.D., *Professor of Physiological Chemistry* and *Director of the Sheffield Scientific School*, 3 Sheffield Hall,
Monday, Tuesday, Wednesday, and Thursday, 10 A. M. to 12 M.

ARTHUR T. HADLEY, M.A., *Professor of Political Economy*,

E, Osborn Hall, Saturday, 10.30 A. M. to 1 P. M.

FRANK K. SANDERS, PH.D., *Professor of Biblical Literature*,

77 Mansfield st., daily, 2 to 3 P. M.

GENERAL STATEMENT

ORGANIZATION

The Graduate School of Yale University forms a section of the Department of Philosophy and the Arts, which was first formally organized in 1847 for scientific and graduate instruction, but now includes Yale College, the Sheffield Scientific School, the School of the Fine Arts, and the Department of Music:

The degrees of Doctor of Philosophy and Civil Engineer were first offered in 1860, the degree of Dynamical or Mechanical Engineer in 1873, that of Master of Arts (previously given without evidence of study) in 1874, and that of Master of Science in 1897.

The professors in the several sections of the Department of Philosophy and the Arts together constitute the Faculty of the Graduate School. The general oversight of graduate instruction and graduate students is entrusted to the Dean and the Administrative Committee, who may be called upon for information and advice. Students are expected to report to the Dean soon after reaching New Haven.

ADMISSION AND REGISTRATION

Graduates of this and other Colleges and Universities, and (in exceptional cases, by special permission) other persons of liberal education, who are at least eighteen years old, are received as students for longer or shorter periods, with or without reference to the attainment of a degree.

All graduate students who are not regularly enrolled in any other department of the University are required to register their names at the office of the Dean at the beginning of each year of study.

The degree of Doctor of Philosophy, with the courses of the Graduate School leading thereto, is open to candidates without distinction of sex.

INSTRUCTION

Courses of study are offered in the following departments :

PSYCHOLOGY, ETHICS, AND PHILOSOPHY.
ECONOMICS, SOCIAL SCIENCE, HISTORY, AND LAW.
SEMITIC LANGUAGES AND BIBLICAL LITERATURE.
CLASSICAL AND INDO-IRANIAN PHILOLOGY.
MODERN LANGUAGES AND LITERATURES.
NATURAL AND PHYSICAL SCIENCE.
PURE AND APPLIED MATHEMATICS.
THE FINE ARTS.
MUSIC.
PHYSICAL CULTURE.

Instruction is given partly by lectures, partly in recitations and by oral and written discussions, partly by directing courses of reading, and partly by the direction of work in the laboratories and with instruments.

The attention of teachers who desire to fit themselves more thoroughly for a higher grade of professional work is called to the advantages offered by this department for pedagogical instruction and discipline. In addition to the special and advanced study of the subjects in which the graduate student desires instruction, and the pursuit of courses in psychology, ethics, philosophy, and of other courses cognate with pedagogy, opportunity is afforded to observe the actual practice in the class-room, as well as the organization of the different departments of the University and their methods of work.

CLUBS

In various voluntary associations, instructors and students meet together periodically for the reading of papers, oral discussions, etc.; such are :

THE CLASSICAL CLUB.
THE MATHEMATICAL CLUB.
THE POLITICAL SCIENCE CLUB.

THE PHILOSOPHICAL CLUB.
THE SEMITIC CLUB.
THE BIBLICAL CLUB.
THE MODERN LANGUAGE CLUB.
THE ENGLISH CLUB.
THE PHYSICS JOURNAL CLUB.
THE ENGINEERS' CLUB.
THE CHEMICAL CLUB.

FEES AND EXPENSES

The fee for instruction is generally one hundred dollars per year ; but it may be more, or less, according to the courses pursued and the amount of instruction received.

A special fee of five dollars is charged to those who use the Gymnasium, and one of two dollars to those admitted to the use of the College Reading-Room.

Board is obtained at prices varying from three and a half to eight dollars a week. The average price is under five dollars.

A list of suitable rooms is kept at the Dean's office.

LIBRARIES AND READING-ROOMS

Students have the free use of all the Libraries of the University. The whole number of volumes in the several libraries of the University is more than 290,000.

THE UNIVERSITY LIBRARY contains more than 245,000 volumes, and many thousands of unbound pamphlets. Its READING-ROOM contains the books most important for daily consultation and reference, together with scholarly periodicals. Of current periodical publications, including publications of learned societies, the Library receives an unusually large number,—the foreign serials alone being not less than five hundred.

THE LINONIAN AND BROTHERS LIBRARY contains about 21,000 volumes of the best current literature.

THE COLLEGE READING-ROOM receives fifty-five daily newspapers, American and foreign, nearly sixty weeklies, and about eighty other periodicals,—in addition to the periodicals received at the University Library. Graduate Students are admitted to the College Reading-Room on payment of an annual fee of two dollars.

THE SHEFFIELD SCIENTIFIC SCHOOL LIBRARY contains 5,000 volumes, largely mathematical.

THE ART SCHOOL LIBRARY contains about 500 volumes of expensive illustrated works.

THE LOWELL MASON LIBRARY contains 4,000 volumes of music.

The Peabody Museum, the Observatory, and the several Laboratories have valuable technical libraries.

Several of the departments of study (the Classical, English, Germanic, Political Science, and Historical) have special libraries of standard works for the use of advanced students.

Dwight Hall, the headquarters of the Young Men's Christian Association, is provided with a good library and a pleasant reading-room, besides the halls used for religious meetings.

A parlor and study-room at 135 Elm street is fitted up for the special use of the women studying in the Graduate School.

LABORATORIES, MUSEUMS, AND COLLECTIONS

The Peabody Museum of Natural History.

The Physical, the Chemical, the Biological, and the Engineering Laboratories, and the Eaton Herbarium, of the Sheffield Scientific School.

The Sloane Physical, the Kent Chemical, and the Psychological Laboratories of Yale College.

The collections of the School of Fine Arts.

The collection of coins in the University Library, and various collections of models, casts, and photographs used in the teaching of mathematics and in other departments of instruction.

THE PHILOSOPHICAL CLUB.
THE SEMITIC CLUB.
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The Sloane Physical, the Kent Chemical, and the Psychological Laboratories of Yale College.

The collections of the School of Fine Arts.

The collection of coins in the University Library, and various collections of models, casts, and photographs used in the teaching of mathematics and in other departments of instruction.

LECTURES AND CONCERTS

The following courses of public lectures and concerts are open to the students of the University :

THE SHEFFIELD COURSE.

THE ART COURSE.

THE DIVINITY SCHOOL LECTURE COURSES.

THE AMERICAN LECTURES ON THE HISTORY OF RELIGIONS.

THE DWIGHT HALL COURSE.

THE PHI BETA KAPPA COURSE.

THE KENT CLUB COURSE.

THE UNIVERSITY CHAMBER CONCERTS.

THE SYMPHONY ORCHESTRA CONCERTS.

DEGREES

THE DEGREE OF DOCTOR OF PHILOSOPHY is conferred upon those students who show the results of resident graduate work by a thesis giving evidence of high attainment and power of investigation, and by an examination on studies whose grade and amount meet the approval of the Faculty. Under ordinary circumstances two or more years' work in residence will be required, but in exceptional cases work of equal grade at another University may take the place of a year's residence here. The thesis must be deposited at the Library for public inspection, not later than May 1. A good knowledge of Latin, German, and French is required in all cases, unless, for some very exceptional reasons, the candidate be excused by the Faculty. The fee for instruction is one hundred dollars per year. The fee for graduation is ten dollars.

THE DEGREE OF MASTER OF ARTS is conferred on Bachelors of Arts of Yale College (and upon Bachelors of Arts of other colleges who have pursued a course of study equivalent to that pursued in Yale College) of two years'

standing or upwards, who have given to the College Faculty evidence of having made satisfactory progress in liberal studies after receiving their first degree. Such evidence may be furnished by one year's systematic study (not professional) in New Haven, under the direction of the College Faculty, followed by an examination. Graduates of other colleges can obtain the degree only by residence as thus described. The charge for instruction will usually be one hundred dollars per year, with a fee of ten dollars for the degree.

Such Bachelors of Arts of *Yale College* as may not choose to reside at the College for the prosecution of study may at any time not less than three years after graduation, show, in either of the two following ways, that they have spent a year in liberal (and non-professional) study, and are worthy of recommendation for this degree. (1) Such candidates may make application to the Faculty for the designation of a course of study, on which an examination shall be taken. This application must be accompanied by a fee of twenty-five dollars. (2) Or a candidate may submit as evidence of his fitness for this degree a printed essay, for the examination of which a fee of twenty-five dollars (to be paid in advance) is required. An additional fee of ten dollars will be charged in all cases for the degree.

A committee of the Faculty is appointed (consisting for the present year of Professors Wheeler and Phillips), to whom candidates for this degree must submit their proposed courses of study for approval by the first of November in each year; and the evidence of a year's study must be submitted to the same committee by June 1.

THE DEGREE OF MASTER OF SCIENCE is conferred on graduates of this or other universities, of two years' standing or upwards, who have taken their first degree in science and who pursue successfully a higher course of

study in science under the direction of the Governing Board of the Sheffield Scientific School. Such a course involves at least one year of resident graduate study, followed by an examination and presentation of a satisfactory thesis in some department of science. A committee of the Faculty is appointed, to whom candidates for this degree must submit their proposed courses of study for approval before the end of October of each year.

THE DEGREES OF CIVIL ENGINEER AND MECHANICAL ENGINEER are conferred on Bachelors of Philosophy who have taken the first degree in Engineering study, and who pursue a higher course under the direction of the Governing Board of the Sheffield Scientific School for at least two years, sustaining a final examination, and giving evidence of their ability to design important constructions and to make the requisite drawings and calculations. The fee for graduation is five dollars.

FELLOWSHIPS

FIVE FELLOWSHIPS yielding four hundred dollars each, not exempting the holders from charges of tuition, have been created by the Corporation out of the income of University funds. These fellowships are open to graduates of all colleges, but preference is given to those who have already spent at least one year in graduate study, and have shown capacity for original work.

The Class of '90 Fellowship, yielding one hundred and fifty dollars, is awarded to a student who has shown ability to do research work.

The Yale Alumni Association of California offers a Fellowship of three hundred dollars to a graduate of one of the California Universities, pursuing studies at Yale in the Graduate School. The incumbent is selected by the Association.

The following Fellowships are, by the terms of the donations, open only to graduates of the Academical Department of Yale University.

THE DOUGLAS FELLOWSHIP.

THE SOLDIERS' MEMORIAL FELLOWSHIP.

THE SILLIMAN FELLOWSHIP.

THE JOHN SLOANE FELLOWSHIP.

THE SCOTT HURTT FELLOWSHIP.

THE ELLEN BATTALL ELDRIDGE FELLOWSHIPS (two).

THE MACY FELLOWSHIP.

THE LARNED FELLOWSHIPS (three).

THE FOOTE FELLOWSHIPS (three).

SCHOLARSHIPS

TWENTY SCHOLARSHIPS, yielding one hundred dollars each, have been created by the Corporation out of the income of University funds. These scholarships are open to graduates of all colleges.

The following Scholarships are open only to graduates of the Academic Department of Yale University.

THE CLARK SCHOLARSHIPS, and

THE W. W. DE FOREST SCHOLARSHIP.

THE DANIEL C. EATON GRADUATE SCHOLARSHIP IN BOTANY is endowed with the income of a fund of two thousand dollars given by Mrs. Eaton in commemoration of her husband, the late Professor Daniel C. Eaton. This scholarship will be open for competition to members of the Senior Classes in the Academic and Scientific departments, on conditions to be prescribed by the Governing Board of the Sheffield Scientific School.

Six scholarships of \$100 each (covering the charges for tuition) are awarded, on application, to those members of the graduating class of the Sheffield Scientific School who have attained high proficiency in the special studies of their respective courses, and who desire to spend one or more years in graduate study in the School. Each scholar-

ship will be available for one year only. Application for these scholarships must be made in writing on or before June 1st to the head of the department to which the student belongs, with a statement as to the character of the graduate study to be pursued.

Candidates for appointment to Fellowships and Scholarships should send their applications, accompanied by letters of recommendation and other evidence of the excellence of their work already accomplished, to the Dean, Professor Andrew W. Phillips, not later than May 1.

COURSES OF INSTRUCTION

Courses marked with an asterisk (*) are undergraduate courses, but are open to graduate students, provided that these have the consent of the instructor and the approval of the Faculty.

The number of hours stated means, when not otherwise specified, hours of exercise, lectures, or recitations, each week through the year.

The hours named for the exercise are subject to change.

COURSES OF INSTRUCTION

I. PSYCHOLOGY, ETHICS, AND PHILOSOPHY

GEORGE T. LADD, D.D., LL.D.

GEORGE M. DUNCAN, M.A.

EDWARD W. SCRIPTURE, Ph.D.

HENRY DAVIES, Ph.D.

HENRY S. WILLIAMS, Ph.D.

E. HERSHEY SNEATH, Ph.D.

THOMAS C. STEARNS, Ph.D.

GERVASE GREEN, Ph.D.

Professor LADD :—

1 *Kant Seminary.* 2 hrs.

A thorough study of the *Critique of Pure Reason* and, if time permits, a less thorough study of the *Critique of Practical Reason*. After an expository and critical lecture, a paper upon a topic given out some time in advance is read, to be followed by discussion on the part of both teacher and class.

The effort is constantly made to understand Kant's system of thinking in the light of the history of opinion since his time, and especially of opinion upon the same subjects in the present day.

[Not given in 1899-1900.]

2 *Ethical Seminary.* 2 hrs.

The principal topics in the philosophy of conduct will be studied in detail ; such as the origin and development of moral consciousness, the conceptions of duty, virtue, and the moral law, the nature, ground, and sanction of the right, and the different "Schools" of ethical writers. The method of study combines lectures with papers and discussions by the class, and special research work for those who desire to investigate more thoroughly the literature of the particular subjects.

[Not given in 1899-1900.]

*3 *Introduction to Philosophy.* 2 hrs.

This course of lectures is designed to present, in an elementary and summary way, the principal philosophical problems. It may be taken by all whose special studies lie in other departments and as a means of general culture. It is recommended to all who desire to specialize in this department and have not already had its equivalent.

During the latter half of the course special emphasis will be laid upon the philosophy of life and of conduct, in connection with the discussion of problems in Ethics, Aesthetics, and the Philosophy of Religion.

[Not given in 1899-1900.]

*4 *Abnormal Psychology.* 1 hr.

This course of lectures discusses the phenomena of illusions and hallucinations, the physiological changes and mental states in sleep, and in hypnotic, somnambulistic, and other allied conditions. The theory of illusions and hallucinations is discussed in detail.

[Not given in 1899-1900.]

Professor DUNCAN :—

5 *Advanced Psychology.* 2 hrs.

This is a course in General Psychology, in which a detailed study is undertaken of the phenomena of mental life from the scientific point of view. Sully's *Human Mind* is read, with constant reference to Ladd's *Psychology, Descriptive and Explanatory*, James's *Principles of Psychology*, and the works of other leading modern authors; and the reading is accompanied by papers, discussions, and lectures.

[Tuesday, 9.30-11 A. M.]

6a *Epistemology.* 2 hrs.

The nature and conditions of formal truth are studied in connection with the reading of an advanced work on logic, such as Hobhouse's *Theory of Knowledge*. This is followed by a study of the psychology of knowledge and by an examination of the nature, limits, and grounds for the validity of our knowledge of reality. Professor Ladd's *Philosophy of Knowledge* is read in connection with the latter part of the course.

[Friday, 9.30-11 A. M.]

(h.) An historical and critical examination of speculations (more especially from Descartes to the present day) relating to the *philosophy of knowledge*: the history of opinion on the theory of knowledge is traced and the views of the more important thinkers critically examined with a view to the construction of a positive doctrine of knowledge. The course will be conducted in the *seminary* method. Much of the work is research,—the results being presented in papers for discussion.

7 *Discussions in Philosophy.* 1 hr.

A course in *philosophical criticism*, intended to develop and train the critical spirit, to deepen interest in the more profound themes of philosophy by showing their connection with popular life and thought; and to vindicate sound psychology and a theistic and Christian philosophy from the perennial misconceptions to which they are exposed. To this end some of the popular

philosophical papers of Huxley, Tyndall, Clifford, Spencer, and others are read and freely discussed. Considerable attention will be given to some of the philosophical aspects of the Theory of Evolution, and those who take the course are recommended to take course 10, given by Professor Williams.

[Thursday, 9.30 A. M.]

***8 *History of Modern Philosophy.* 2 hrs.**

An elementary study of the development of speculative thought from Descartes to the present time, with cursory reading of philosophical masterpieces from Descartes to Kant. This course (which is largely a lecture course, with frequent exercises on the texts read and occasional examinations on both the lectures and texts), while intended primarily for general culture, also aims to be an introduction to the more special study of philosophy in its various branches and problems.

[Wednesday and Saturday, 11.30 A. M.]

Professors DUNCAN and SNEATH :—

9 *Metaphysics.* 2 hrs.

The systematic and critical study of the problems of general metaphysics will be undertaken, including an examination of such conceptions as space, time, causation, energy, relation, quality, etc. Considerable portions of Lotze's *Metaphysics*, Bowne's *Metaphysics*, Bradley's *Appearance and Reality*, Wundt's *Metaphysik* and Ladd's *A Theory of Reality* will be read and discussed; but the exercises will consist principally in the presentation and discussion of elaborate papers embodying the results of research by the class.

[Saturdays, 8.30 to 10 A. M.]

Professor WILLIAMS :—

***10 *The Principles of Evolution.* 2 hrs.**

A discussion of the underlying facts, the methods of scientific research, and the philosophical problems upon which the modern philosophy of evolution is founded.

Professor SNEATH :—

11 *Philosophical Scepticism.* 2 hrs.

This course involves an historical and critical examination of scepticism with special reference to the construction of a theory of knowledge. It is divided into three parts as follows :

1. *Historical.* The work in this part of the course includes an examination of the nature of scepticism as revealed in the history of speculative thought. It involves a study of the scepticism of the Sophists; the Earlier and Later Pyrrhonists; the Middle and New Academies; the scepticism of Augustine and Descartes; of Hume and Kant; the positivism of Comte, Mill, and Lewes; the relativism of Hamilton and Mansel; and the agnosticism of Spencer.

2. *Critical.* After considering the significance of scepticism, a careful examination is made into the causes and grounds of scepticism, special attention being given to sensationalism and error.

3. *Constructive.* This part of the course is devoted to a study of the psychology and philosophy of knowledge—to an inquiry into the nature, origin, validity, and extent of knowledge. The work is conducted in the *seminary* method.

[Monday, 3-4.30 P. M.]

12 *Philosophy of Mind.*

1 hr.

Beginning with the facts and laws established by empirical psychology, this course aims at the construction of a metaphysic of mind. The following are some of the subjects to be treated: The concept of mind; the reality, nature, genesis, and destiny of mind; the relations of mind and body: materialistic objections, etc. The course will be based on Ladd's *Philosophy of Mind*.

[Tuesday, 11.30 A. M.]

*13 *Philosophical Anthropology.*

2 hrs.

This course furnishes an outline study of man, his body and mind in their relations, his relations to nature, to his fellows, and to God. The course is based upon Lotze's *Microcosmus*.

[Monday and Thursday, 10.30 A. M.]

14 *Philosophy and Literature.*

1 hr.

This course will consider the nature and the problems of philosophy as presented in the writings of distinguished men of letters. The works of the following authors will be specially considered: Coleridge, Carlyle, Tennyson, and Browning.

[Wednesdays, 9.30 A. M., A. O.]

Dr. SCRIPTURE :—

*15 *Psychology (Physiological and Experimental).*

2 hrs.

A general course illustrated by physiological and psychological experiments. Course 14 should be taken at the same time.

Text-books : Ladd's *Outlines of Physiological Psychology* ; Scripture's *New Psychology*.

[Tuesday and Thursday, at 2, or at 4 P. M., Psychological Laboratory.]

- *16 *Psychology (Elementary Laboratory Course)*. 2 hrs.
A series of exercises intended to supplement course 15.
[Friday, 4-5.50 P. M., Psychological Laboratory.]

- 17 *Psychology (Advanced Laboratory Course)*. 1 hr.
A preparatory study of Fisher's *Infinitesimal Calculus* is followed by lectures on the theory of measurements (with references to Weinstein's *Physikalische Maassbestimmungen*, Vol. I.) and a series of exercises.
[Wednesday, 4 P. M., Psychological Laboratory.]

- 18 *Psychology (Methods of Research)*. 1 hr.
A study of Nernst-Schönfliess's *Mathematische Behandlung der Naturwissenschaften* with psychological illustrations is followed by a study of the theory of probabilities and its applications in psychological statistics.
[Monday, 3 P. M., Psychological Laboratory.]

- 19 *Psychology of Expression (Gesture, Speech, Music)*. 1 hr.
An experimental study of the expression of thought and emotion as shown in facial expression, in gesture, in rhythmic movements, in prose and poetical speech, and in musical rhythm.
[Wednesday, 3 P. M., Psychological Laboratory.]

- 20 *Psychology (Technical Course)*. 1 hr.
This course consists of a series of exercises for those who expect to teach experimental psychology and to manage a laboratory. The instruction covers: the principles involved in making, repairing, and caring for apparatus, with practical training in wood and metal work; the methods of experimental demonstration, with practice in the preparation of lantern slides and the use of lime-light and electric lanterns; the principles of laboratory economy, etc. The workshop practice will be cared for by a special instructor. The student is expected to make several pieces of apparatus involving the use of the lathe and the various small tools. He is urged to become sufficiently familiar with apparatus and lantern-work to give successfully an illustrated lecture; practice lectures will be held and subjected to criticism.
[Monday, 4 P. M., Psychological Laboratory.]

21 *Psychology (Research).* 4 hrs.

Only those who have had sufficient experience are permitted to undertake independent investigations. Special arrangements are made for candidates for the degree of Doctor of Philosophy. The results of all investigations belong to the archives of the laboratory. Those who undertake investigations thereby agree to prepare the results for publication, subject to approval, in the *Studies from the Yale Psychological Laboratory*.

[The two following courses may be taken either as studies in philosophy or as studies in Greek. Philological discussions will be introduced into both these courses in so far as such discussions may be necessary to a clear understanding of the thought involved.]

Dr. STEARNS:—

22 *Pre-Socratic Philosophy.* 2 hrs.

The sources and remains of the earliest Greek Philosophy will be critically examined and interpreted with a view to explain the origin and first developments of that line of reflective thinking which has had most influence upon the modern scientific and philosophical ideas and problems.

[Monday and Thursday, 9.30 A. M., A, O.]

23 *Psychology of Aristotle.* 2 hrs.

The *De Anima* will be translated and interpreted. The course will serve to acquaint the student with Aristotle's peculiar philosophical terminology and with the underlying conceptions in his entire system of thinking. The consideration of the more distinctly psychological doctrines will afford an opportunity to point out their implicates in preceding thought, to show their subsequent development, and to criticize them in the light of modern science. The *seminary* method will be used.

[Friday, 3-4.50 P. M., B, O.]

*24 *Plato's Philosophical System.* 2 hrs.

Nearly all the well-authenticated Dialogues will be read and thoroughly discussed, with a view to determining as far as possible Plato's opinions upon the principal philosophical questions. Especial attention will be given to the theory of *Ideas*. Jowett's translation of the Dialogues is used as a text-book.

[Wednesday and Saturday, 9.30 A. M., A, O.]

*25 *Ancient Philosophy.*

2 hrs.

An elementary course, designed to meet the wants not only of the student who desires in the way of general culture to know something about the scientific thoughts of the Greeks, which have so greatly determined the course of history, but also of the student who wishes an historical basis for his philosophical studies. Attention will be directed to the first appearance of each new concept and problem and an attempt made to view them from the standpoint of the early thinkers. At the same time every development in these concepts and problems will be noted, and such of them emphasized and more fully discussed as are still valid for modern philosophical thinking. Lectures will be given, and topics assigned for reading, and brief papers, and occasional tests will be required.

[Tuesday and Friday, 10.30 A. M.]

Dr. GREEN :—

26 *History and Theory of Education.*

2 hrs.

This course will comprise readings and lectures on the history and theory of modern education. The bearing of psychology upon methods of teaching and curricula will be considered, followed by a study of the works of the great educational reformers, closing with a critical study of present theory and practice. The course is especially but not exclusively adapted to all who intend to engage in educational work.

[Monday and Friday, 3 P. M.]

27 *Locke's Essay concerning Human Understanding.*

1 hr.

A careful study of this great classic of empiricism is undertaken and an attempt made to estimate its value and its influence upon subsequent thought. Professor Fraser's new critical edition of the Essay and Langley's translation of Leibnitz's *Critique of Locke* are used, and Leibnitz's criticisms are compared with those of the more important of Locke's other expounders and critics, such as Lee, *Anti-Scepticism*; Cousin, *Philosophy of Locke*; Green, *Introduction to Hume*; Webb, *Intellectualism of Locke*, etc.

[Friday, 11.30 A. M.]

*28 *Outlines of General Philosophy.*

2 hrs.

This course will aim to furnish the student with a knowledge of the main problems of general philosophy, and to acquaint

him with the various answers which have been given to these problems. Selections from various authors will be read : Paulsen's *Introduction to Philosophy*, Bowne's *Theory of Thought and Knowledge*, Seth's *A Study of Ethical Principles*, Knight's *Philosophy of The Beautiful*, and Fraser's *Philosophy of Theism*. The exercises of the course will consist of recitations, discussions, and lectures.

[Wednesday and Saturday, 11.30 A. M.]

Dr. DAVIES :—

29 *Aesthetics.* 1 hr.

The object of this course is to review the history of thought on the subject of the beautiful ; to give a philosophical account of the foundations upon which the arts rest ; and to study scientific theory of art in its relation to general philosophical system. Bosanquet's *History of Aesthetics*, Rutgers Marshall's *Pain, Pleasure, and Aesthetics*, and other works, will be read in connection with the course.

[Wednesday, 2 P. M.]

30 *Philosophy of the Early Christian Fathers.* 2 hrs.

This course of lectures gives a detailed view of the development of Christian thought during the first three centuries. Its object is to trace the philosophical influences which helped to modify Christianity during this period ; to show how Christianity triumphed over heathen philosophy, and how the beginnings of a Christian philosophy were made ; and to estimate critically the value of these early results for modern thought.

[Wednesday, 3-4.30 P. M.]

THE PHILOSOPHICAL CLUB is designed to afford opportunity both for comparison and discussion of views among all the students in this Department, and also for hearing addresses and papers from distinguished authorities on philosophical subjects, who are not connected with the Department as teachers. The regular meetings of the Club are fortnightly, on Tuesday evening. All graduate students who take courses in philosophy are entitled to membership, on application ; others may be admitted to membership by vote of the existing members.

II. ECONOMICS AND SOCIAL SCIENCE, HISTORY, LAW

EDWARD J. PHELPS, LL.D.	GEORGE P. FISHER, D.D., LL.D.
WILLIAM H. BREWER, Ph.D.	ARTHUR M. WHEELER, LL.D.
WILLIAM G. SUMNER, LL.D.	CHARLES H. SMITH, LL.D.
GEORGE B. ADAMS, Ph.D.	HENRY W. FARNAM, R.P.D.
ARTHUR T. HADLEY, M.A.	GEORGE L. FOX, M.A.
EDWARD G. BOURNE, Ph.D.	WILLIAM F. BLACKMAN, Ph.D.
EDWIN B. GAGER, B.A.	JOHN C. SCHWAB, Ph.D.
OLIVER H. RICHARDSON, Ph.D.	IRVING FISHER, Ph.D.
FREDERICK WELLS WILLIAMS, M.A.	FRANK STRONG, Ph.D.
WILLIAM B. BAILEY, Ph.D.	ALBERT B. WHITE, Ph.D.
JOHN M. GAINES, B.A.	

ECONOMICS AND SOCIAL SCIENCE

Professor SUMNER :—

- 1 *Anthropology.* 2 hrs.
A careful study of Ranke's *Der Mensch* (2d ed.), with an examination of the separate topics by means of all the appropriate material.
[Not given in 1899-1900.]
- 2 *Systematic Societology; Section IV. a.* 2 hrs.
An ethnological study of the development of the *Mental Operations* and of the growth and contents of the *Mental Outfit* of the human race, in the earlier stages; knowledge and pseudo-knowledge, world-philosophy, otherworldliness, industrial theories, *mores*, codes, mental training, traditional wisdom.
[Not given in 1899-1900.]
- 3 *Politics and Finance in the History of the United States.* 2 hrs.
A study of the evolution of the institutions of the democratic republic, of the societal organization, and of the history of the money of account.
[Not given in 1899-1900.]
- 4 *The Industrial Revolution of the Renaissance Period.* 2 hrs.
A chapter in the history of the development of the industrial organization. The industrial element in the Renaissance. The transition from medieval to modern society in its causes, new elements, effects on classes, effects on economic doctrine. Changes imposed on the industrial organization; world-commerce, land-tenure, handicrafts, banking, and money.
[Monday, 10.30 A. M. and Wednesday, 9.30 A. M.]

5 *The Beginnings of the Industrial Organization.* 2 hrs.

An ethnological study of the industrial organization from its earliest beginnings. Division of labor between the sexes and the special functions of each; regulation of industry; slavery; formation of capital; discoveries and inventions; domestication of animals and plants; money, etc.

[Wednesday and Thursday, 10.30 A. M.]

*6 *The Science of Society.* 2 hrs.

An elementary course, with text-book lessons and examinations, in Anthropology and Ethnology, with the origin of civilization and the development of institutions.

In connection with this will be given a course of lectures on Systematic Sociology [Societology]. Topics are: The organization of society; the individual and the social; social forces; militarism and industrialism; property; marriage, family, and the status of women; primitive notions in religion and philosophy; civil government, law and rights; slavery and classes; economic interests and their collisions; conditions of welfare; origin of moral standards; reaction of reason on experience. These topics are treated exclusively in the light of Historical Anthropology and Ethnology.

[Monday and Thursday, 8.30 A. M., A. O.]

*6a *The Science of Society.* 2 hrs.

A course with a German text-book (Lippert's *Kulturgeschichte*; 2 vols., Stuttgart, 1887), for those who are able to read difficult German. The exercises are coincident with those of course 6, including the lectures as above.

[Monday and Thursday, 8.30 A. M., A. O.]

Professor FARNAM:—

7 *Pauperism.* 2 hrs. 1st term.

An examination of the nature and causes of indigence, the history of efforts to deal with it, and some of the modern problems arising in connection with it.

[Monday and Wednesday, 11.30 A. M.]

8 *The Modern Organization of Labor.* 2 hrs. 2d term.

These lectures treat of the historical antecedents and the development during the nineteenth century of associations of wage-receivers. They therefore include an account of the

structures, aims, and methods of such societies in different countries, together with a discussion of their relations to socialism, the factory system, labor disputes, labor legislation, workmen's insurance, provision for the unemployed, and other features of the modern industrial world.

[Monday and Wednesday, 11.30 A. M.]

9 *The Principles of Public Finance.* 2 hrs.

A systematic survey of the means by which the expenditures of government are met, regard being had both to the economic principles involved and to the fiscal systems of modern states. Leading topics are: the budget, taxation (national and local), public debts, and state banks considered as aids to public credit.

[Not given in 1899-1900.]

Professor HADLEY :—

10 *Economic Problems of Corporations.* 1 hr.

This course deals with the growth of combinations, trusts, and monopolies; the difficulties connected with private and with public management of such monopolies; the control of services rendered and prices charged; with especial reference, under the latter head, to the subject of railroad regulation.

[Thursday, 12 M.]

11 *The Relation between Economics and Ethics.* 1 hr.

An historical study of the development of moral and legal standards in their relations to one another, followed by criticisms of various schemes of social policy and legislation. No one is admitted to this class who is not well grounded in the general principles of Economics. The members of this class are expected to prepare critical papers as an essential part of the work of the class.

The topics treated in 1899-1900 are the general problems of property right, tenure, sale, and remuneration; in 1900-01, those of money, credit, and monopolies; in 1901-02, those of labor and labor legislation.

[Friday, 9.30 A. M.]

*12 *History of Economic Thought.* 2 hrs.

A review of some of the leading controversies, from Adam Smith onward. Sumner's *Problems in Political Economy* will be

used as an exercise-book, supplemented by much outside reading. No one will be admitted to this class who has not an acquaintance with the elements of economics.

[Wednesday and Saturday, 9.30 A. M.]

***13 *The Regulation of Trade and Industries.* 2 hrs.**

A study of European experiences, *open to those who are able to read German well*; investigating the different methods of trade and transportation which have developed in different countries, and the modes of dealing with them adopted by the several governments.

[Friday, 2 to 4 P. M.]

Professors HADLEY and SCHWAB :—

***14 *Economics.* 2 hrs.**

A general course in the elements of the science.—For two-thirds of the year conducted by Professor Hadley on the general problems of production, exchange, and distribution of wealth; for the remaining time, by Professor Schwab on money and monetary questions.

[Wednesday and Saturday, 11.30 A. M.]

***15 *United States Industrial History.* 2 hrs.**

A course on the history of the tariff legislation and industrial development of the United States.—For two-thirds of the year conducted by Professor Schwab on tariff history, foreign commerce, and industrial organization; for the remaining time, by Professor Hadley on railroads.

[Tuesday and Friday, 11.30 A. M.]

PROFESSOR SCHWAB :—

***16 *Finance.* 2 hrs.**

A course of lectures on applied economics. First term: the history of money and banking in the United States; Second term: investment securities and public finance.

[Monday and Thursday, 11.30 A. M.]

***17 *United States Financial History.* 1 hr.**

An investigation course in the financial history of the United States, 1873-1900. The topics for investigation will center about the silver agitation.

[Wednesday, 12.30 P. M.]

18 *The Finances of the Confederate States, 1861-65.* 1 hr.

A course of lectures upon the financial and industrial history of the South during the Civil War.

[Tuesday, 10.30 A. M.]

Professor BLACKMAN :—

19 *Social Science.* 2 hrs.

A study of some important problems of American life, such as the negro ; the immigrant ; the defective, dependent, vicious and criminal classes (charities and corrections) ; the city ; the wage and factory system ; the family ; and communism, socialism, and anarchism. The lectures are supplemented by reports and book-reviews by the students, and (probably) by a visit to the charity and correctional institutions of New York. As introductory to the course, a few lectures are given on the study and literature of Sociology.

[Wednesday and Saturday, 8.25 A. M.]

20 *The Literature of Sociology.* 2 hrs. 1st term.

A classification of the principal writers in "schools," and a comparison and contrast of their points of view and methods : contractual (Rousseau), positivist (Comte), evolutionary (Spencer, Drummond), biological (Schäffle), psychological (Tarde, Durkheim, Le Bon, Simmel, Ward, Giddings, Baldwin), "group-wise" (Gumpłowicz), observational, and statistical (Le Play, Quetelet), theocratic (Old Testament).

[Thursday, 10 A. M.]

21 *A Sociological Study of the Family.* 1 hr. 2d term.

Its biological and psychological bases ; its history ; matriarchy and patriarchy ; polyandry, polygyny, monogamy ; heredity, physical and social ; prostitution, and divorce ; the moral and social significance of the family.

[Thursday, 10 A. M.]

22 *The Social Teaching and Influence of Christianity.* 1 hr.

Selected portions of the following works will be studied and discussed : Friedländer's *Sittengeschichte Roms*, Sienkiewicz's *Quo Vadis*, Mathews's *Social Teaching of Jesus*, Schmidt's *Social Results of Early Christianity*, Uhlhorn's *Conflict of Christianity with Heathenism* and *Die Christliche Liebesthätigkeit*, Nash's *Genesis of the Social Conscience*, Lecky's *History of European Morals*, Dennis's *Christian Missions and Social Progress*.

[Thursday, 8.25 A. M.]

Dr. BAILEY :—

*23 *Statistics.* 2 hrs.

The sources and reliability of statistical data are discussed, and the methods of distinguishing true and false inferences are pointed out. Index numbers are studied and the lectures treat of the statistics of population, crime, suicide, property, etc. The attempt is made to determine the nature of the laws which govern the group-actions of men. Mayo-Smith's *Statistics and Sociology* is used as a basis.

[Monday and Thursday, 12.30 P. M.]

Mr. GAINES :—

*24 *Mathematical Economics.* 2 hrs.

The course is prefaced by a few lessons in elementary calculus. These are followed by the analysis of: value and prices; general price-levels; effects of "appreciation" and "depreciation," with statistical discussion; bimetallism and other currency schemes, with especial reference to the experience of France, Austria, and India; international trade; capital and interest; distribution.

Cournot's *Mathematical Theory of Wealth* and Fisher's *Introduction to the Calculus; Value and Prices; and Appreciation and Interest*, are used as a basis. Reading is also assigned in other works, especially recent investigations. Special papers are prepared and read by members of the class.

[Wednesday and Saturday, 10.30 A. M.]

LAW

Professor E. J. PHELPS :—

*25 *Law.* 2 hrs. 2d term.

Lectures upon American Constitutional Law and upon International Law. Text-books are read in connection with the lectures.

This course is intended not merely for those who are contemplating the study of the law as a profession, but for all who are interested in the subjects as a branch of general education.

Students who pursue the course and pass the graduating examination thereon, are entitled to a certificate which in many States is accepted as counting a year in the period of study required for admission to the bar.

[Friday and Saturday, 12.30 P. M., A. O.]

Mr. GAGER :—

*26 *Jurisprudence.*

2 hrs. 1st term.

Lectures, recitations, private reading, and examinations on the following subjects: law in its relations to the origin, development, and government of political society; origin and development of customary law; relation of statute law to customary law; formation and development of codes of law; nature and origin of legal rights; principles of the law governing rights in land; principles of the law governing contract rights; the law of remedies for the violation of rights; origin and procedure of courts of law and equity; criminal law. The instruction in this course is designed to present an historical and philosophical view of the law in its great outlines, as common to all nations, and particularly as developed in the Anglo-Saxon race. In addition it is designed to show the practical methods which obtain in modern commercial transactions and the law as applied to them, and to point out the principal rights acquired, the duties owed, and the liabilities incurred in the every-day conduct of affairs.

To those who exhibit satisfactory evidence of having read the four books of Blackstone's *Commentaries* in connection with this course, a special examination in Blackstone will be given. All who satisfactorily pass such special examination will be entitled to a certificate of having completed the reading of Blackstone.

[Friday and Saturday, 12.30 P. M., A. O.]

Mr. FOX :—

27 *Comparative Municipal Government.*

1 hr.

The subject is treated from a practical rather than an historical point of view, and has a close relation to the future work of the student as a citizen. Some of the subjects considered are the sphere and functions of city government, existing and proposed; organization and methods of administration; relation to the higher legislature; attitude toward natural monopolies; sources of revenue and methods of expenditure. The leading types of American city government are described, together with a survey of European cities. Original reports upon city charters are required, and occasional debates may be held on questions of municipal policy.

[Tuesday, 4 P. M.]

HISTORY

Professor BREWER :—

29 *Physical Geography in its relation to History.*

1 hr. 2nd half of 2d term.

A course of about ten lectures discussing the following topics : the relations of man to the region he inhabits ; physical geography as related to the development of civilization ; natural aids to the defence and protection of communities ; natural facilities for commerce ; the effect of these several factors on the history of nations ; and the modification of these natural conditions by modern science and invention.

[Thursday, 10.30 A. M.]

Professor WHEELER :—

30 *History of Treaties, 1763-1815.*

1 hr.

[Thursday, 10.30 A. M.]

*31 *History of Europe since 1789.*

2 hrs.

Mainly political ; introductory to European politics of our day.

32 *Investigation of special topics in European History from 1789 to 1815.*

1 hr.

A general knowledge of the period, and ability to read French or German easily, are required.

[Saturday, 11.30 A. M.]

33 *Constitutional History of England since 1760.*

1 hr.

Professor C. H. SMITH :—

34 *American History.*

2 hrs.

Political and Constitutional History of the United States from the adoption of the Constitution in 1788, to the time when the contest over the extension of slavery into the territories became prominent. For topical study and discussion by the class, with the presentation of written outlines each week.

[Tuesday, 10.30 A. M. to 12.20 P. M., D. O.]

35 *American History.*

2 hrs.

Political and constitutional history of the United States from the time when the contest over the extension of slavery into the

territories became prominent, until the close of the Reconstruction period in 1877. For topical study and discussion by the class, with the presentation of written outlines each week.

[Omitted in 1899-1900.]

36 *American History.* 1 hr.

A constitutional course, taking up the structure and working of the Legislative, Executive, and Judicial departments of the Federal Government. Special attention will be given to the changes which have been wrought in the Constitution in other ways than by formal amendment.

A lecture course, with collateral reading, and an examination at the close of the year.

[Tuesday, 9.30 to 10.20 A. M., D₂ O.]

37 *American History.* 1 hr.

A constitutional course, taking up the relations of the States to the Federal Government, as existing under the Articles of Confederation, as seen in the formation and adoption of the Constitution, as provided for in the text of the Constitution, and as modified by some of the amendments and by usage. Special attention will be given to the National and State rights doctrines as developed at the North and the South respectively before the Civil War.

A lecture course, with collateral reading, and an examination at the close of the year.

[Friday, 9.30 to 10.20 A. M., D₂ O.]

38 *American History.* 2 hrs.

A study of the State Constitutions in their origin and development. A research course, requiring each student to take the Constitution of at least one State and make a careful study of it from the sources, giving special attention to the changes made in it by amendment, and to those conditions in the State which led to amendment. Papers will be prepared and read by members of the class on designated features of a single constitution or a group of constitutions. Lectures will be given on the histories of different States, and on the part assigned to the States in our scheme of government, especially in their relations to their own citizens.

[Friday, 10.30 A. M. to 12.20 P. M., D₂ O.]

Courses 34 and 35 are given in alternate years, and either one may be taken as a first-year course. Courses 36 and 37 may be taken together as a two-hour course, furnishing an historical study of the formation and development of the Federal Constitution in its most important features. Course 38 may be taken as a one-hour course, with an examination at the close of the year, by those who have American History as a minor study and wish the lectures without the research work.

Professor ADAMS :—

*39 *Medieval History.* 2 hrs.

The object of this course is to furnish an outline of the general history of Europe, and to follow the development of political, intellectual, and religious civilization through the period which lies between ancient and modern history.

40 *Medieval Institutions.* 2 hrs.

This course extends through two years, and considers the most important European institutions between the fall of Rome and the sixteenth century. The student is made acquainted with the literature of the subjects treated and with the collections of original material. He is expected to investigate selected topics in the sources and to report to the class upon them, and especial attention is paid to the principles of criticism and to methods of research.

a. The first year's course covers early German institutions ; their modification under Roman influence ; the development of the papal power and its special institutions ; the institutions of Charlemagne's empire ; the origin and the final forms of feudalism ; and the beginnings of national governments.

b. In the second year's course especial attention is given to the growth of English institutions after the Norman conquest, the introduction of feudalism, the administrative system, the courts and the jury, taxation, parliament, and the limited monarchy. These are studied in comparison with the corresponding institutions of the continental states, and the similarities and differences will be noticed. Important continental institutions imperfectly or not at all represented in England are also studied.

[Course b is not given in 1899-1900.]

Dr. WHITE :—

40a *Interpretation of Medieval Economic Documents.*

1 hr. 2d term.

Characteristic documents relating mainly to 12th and 13th century economic history are to be carefully studied with reference both to language difficulties and historical criticism. Such documents will be selected as tend to throw the most light on the leading economic problems of the medieval period. The work is to be based on *Documents Relatifs à l'Histoire de l'Industrie et du Commerce en France*, edited by Fagniez.

Professors ADAMS and BOURNE :—

41 *Methods of Historical Research and Criticism.* 1 hr.

The first half of this course, under Professor Bourne, consists of lectures and discussions on the principles of historical criticism, for which Langlois and Seignobos' *Introduction to the Study of History* will serve as an outline. A few typical problems of internal and external criticism will be examined by the class and thoroughly analysed. The second half, under Professor Adams, consists of practical exercises in the study of selected historical documents, so arranged as to furnish examples of all the important points of method. The weekly exercises in this course may occupy two hours.

[Monday, 3 P. M.]

Professor ADAMS :—

*42 *English Constitutional History.* 2 hrs.

Particular attention will be given to the connection between English institutions and American, to the history of judicial institutions, and to the forms and operation of the present English government. The more important constitutional documents will be discussed in detail as well as such other contemporary sources as are accessible. While this course is of special value to those who intend to study law, the interest of the general student will also be kept in view.

I, Monday and Thursday, 10.30 A. M., }
II, Tuesday and Friday, 9.30 A. M., } C Alumni Hall.

Professor BOURNE :—

*43 *American History (Colonial).* 2 hrs.

This course will deal with the history of the American Colonies from the beginning of the discoveries until the end of the Ameri-

can Revolution. The nature and objects of colonies, the character and aims of the colonists, the political and social development of the colonial communities, and the causes of the Revolution will be the leading topics. The work of the course is based on Hart's *American History told by Contemporaries*, vols. i and ii.

[Tuesday and Friday, 9.30 A. M., C₂ O.]

*44 *American History (National).* 2 hrs.

The Political History of the United States from 1783 to 1877. The rise and growth of parties, the development of democracy, the influence of the westward expansion and of slavery on political life, and the origin and significance of the more important economic questions will be discussed.

I, Monday and Thursday, 9.30 A. M., } A₁ O.
II, Monday and Thursday, 10.30 A. M., }

45 *European Colonies in America.* 2 hrs.

A comparative study of the colonization of the New World. This course begins with a brief review of medieval commerce and of the impulses promoting the voyages of discovery. This is followed by a more detailed study of representative colonies. The Spanish, French, and English colonies are compared with each other and with their respective mother countries. Particular attention is given to the various forms of colonial administration and to the early steps toward Union. In the latter part of the course the causes of the American Revolution and the downfall of the old colonial system are examined.

[Tuesday and Thursday, 3 P. M.]

46 *Sources and Literature of American History.* 1 hr. 2d term.

Informal lectures, with reports and criticisms by the class.

47 *Modern European and English Historiography.*

1 hr. 2d term.

History of modern historical literature and investigation from the middle of the eighteenth century. After a brief review of the general condition of historical studies in the last century, the modern development of historical study in Germany, France, and England is examined and its progress followed in the representative works of historical scholarship down to our own time.

[Omitted in 1899-1900.]

48 *Diplomatic History of the United States.* 2 hrs. both terms.

History of the foreign relations of the United States from the beginning of the Revolution to the close of the Civil War. Special attention is given to the relations with Spanish America and to the annexations of territory. A reading knowledge of Spanish is very helpful for the prosecution of this course.
[Omitted in 1899-1900.]

Dr. F. STRONG :—

49 *Social and Economic History of the United States from 1830 to 1876.* 1 hr.

A research course which will have especial reference to the Middle, Southern, and Western States. Among other things an attempt will be made to get a clear view of the life of the people. The social aspects of the slavery problem and allied subjects will be taken up. A careful study will be made of the apportionment of immigration for the period and the results produced. Social and religious movements will be considered with their bearing on the Civil War, together with the social and economic changes during and after the Civil War. The economic side of the Reconstruction period will be emphasized.

50 *The History of England during the Commonwealth and Protectorate, etc.* 1 hr.

A research course which will have especial reference to the social and economic aspects of the period.

A careful study will be made, among other things, of the finances of the Commonwealth and Protectorate; Cromwell's foreign and colonial policies: his relations to the mercantile system and the Elizabethan Age; the transportation of idle and disaffected persons to English colonies; kidnapping and kindred subjects.

51 *Social and Economic History of the United States to 1830.*

This is a research course and is complementary to that of course 49 in Social and Economic History from 1830 to 1876.

A careful study will be made of the early history of slavery and of the social and economic changes during the time of the Articles of Confederation and about the year 1800. Other topics of study will be similar to that of course 4.

Assistant Professor RICHARDSON :—

- 52 *English History from the accession of the Tudors to the reign of William and Mary.* 2 hrs.

A research course which extends through two years and lays more stress upon the constitutional than upon the political side of the subject. Construction of bibliographies, and reports based upon independent investigation of the sources, form an important part of the work.

a. The course for the first year embraces the period between 1485 and 1603. The reigns of Henry VII., Edward VI., and Mary are treated with comparative brevity in lectures, with assigned readings from primary and secondary sources, while particular attention is paid to constitutional developments under Henry VIII. and Elizabeth. [Course a is not given in 1899-1900.]

b. The course for the second year embraces the period between 1603 and 1688. The constitutional history of the Puritan Revolution will receive especial consideration. The work consists in large part of a systematic study of the documents contained in Prothero's *Statutes and Constitutional Documents*, and Gardiner's *Constitutional Documents of the Puritan Revolution*. [Course b is given in 1899-1900.]

- 53 *France before the Revolution.* 1 hr.

This course embraces the study of the institutions of the *Ancien Régime*; also of the formation and growth of the revolutionary spirit. Representative works of representative eighteenth century authors will be read and discussed.

[Tuesday, 9.30 A. M.]

- *54 *English Political History.* 2 hrs.

This course develops especially those topics of political history which bear directly upon the growth of English nationality and national institutions. In the latter part of the course considerable attention will be given to the colonial expansion.

I, Monday and Thursday, 9.30 A. M., }
II, Tuesday and Friday, 10.30 A. M., } C Alumni Hall.

- *55 *History of Europe from the Reformation to the French Revolution.* 2 hrs.

This course will deal mainly with the growth of the European State system, the influence upon Europe of its colonial expansion.

sion, and the political and intellectual movements preparatory to the Revolutionary epoch. Some attention also will be given to the economic history of the period.

[Monday and Thursday, 12.30, C Alumni Hall.]

MR. F. W. WILLIAMS :—

***56** *Ancient Oriental Nations from the earliest times.* . 2 hrs.

A comprehensive survey of the beginnings of civilization, and its development in the principal nations of antiquity, including Babylonia, Assyria, Egypt, Phoenicia, and Media. This course illustrates the connection of Biblical and profane history, discusses the origins of political and social institutions, religions, the arts and sciences, and the Asiatic sources of European civilization, and constitutes an introduction to the study of history.

[Monday and Thursday, 12.30 A. M., C, O.]

***57** *Modern Asiatic History.* 2 hrs.

A course embracing successively the regions of India, Japan, China, and Central Asia, with particular regard to their history since the 17th century, their governments, and their relations with European powers. The culture, faiths, and sociology of existing nations in the Far East are here considered with a view of interesting those whose historical knowledge is confined to the Western world. The course is designed to stimulate further reading by students in special topics suggested by the instructor, upon which written essays will be presented and discussed. It also offers an opportunity for those who contemplate missionary careers to acquaint themselves with the political and social condition of the more important foreign missionary fields.

[Tuesday and Wednesday, 12.30 A. M., C, O.]

***58** *Medieval Asia and the Mohammedan Conquest.* 2 hrs.

This course begins with the period of the Parthian Empire, follows the rise and extension of the New Persian Monarchy, or Kingdom of the Sassanidae, to its overthrow by the Mohammedans, and traces the spread of Islam East and West through the Middle Ages to the height of its power. It both concludes the ancient history of Western Asia and shows the Asiatic influences in European history down to modern times.

[Monday and Thursday, 11.30 A. M., C, O.]

59 *Administration of European Colonies.* 2 hrs.

An investigation of the systems employed by various European nations in governing their colonial possessions, particularly in Africa and the East. The causes leading to the acquisition of these colonies are considered in connection with the policy pursued by each of the powers in turn, after which attention is given to the financial, economic, and administrative features peculiar to each.

Professor GEORGE P. FISHER :—

60 *General Church History.* 3 hrs.

This course comprises the following topics: The nature, divisions, and sources of Church History, with a review of the literature on the subject; the old or preparatory dispensation in its relation to Christianity; the condition of the Graeco-Roman world at the introduction of the Gospel; the establishment of Christianity, and the conflicts of the apostolic age; the spread of Christianity, including especially the conversion of the Roman Empire and of the Teutonic nations; the changes in ecclesiastical polity in the early centuries; the organization of Latin Christianity under the Papacy; the relations of the Papacy and the Church to civil society in the Middle Ages; the Protestant Reformation, with its causes and the systems of polity adopted by the different Protestant churches; Christian life, and its characteristic features in the successive eras, including the rise and subsequent history of monasticism; the history of Christian worship.

[Monday, Thursday, and Saturday, 10 A. M.]

61 HISTORICAL SEMINARY.

An advanced course in the methods of historical research is conducted by the professors of History. The members of the course prepare papers upon topics selected with especial reference to the possibility of a comparatively brief treatment based upon a full examination of the existing sources. The opening sessions of the year are devoted to bibliographical work, and to questions of difficulty which may arise in the preparation of the papers. The later sessions are occupied with the reading of the papers and their criticism by the members of the course and by the professor in whose department the topic falls. This criticism has especial reference to the handling of the sources, the constructive method employed, and the validity of the results. The members of this course must have taken course 41 or show an equivalent preparation.

For Outline Survey of Ancient History see course IV, 2.

THE POLITICAL SCIENCE CLUB meets fortnightly for the reading and discussion of papers, and for reports on current literature. A convenient room in White Hall (No. 11) is set apart for its use, and contains a small departmental library which is accessible to the graduate students at all hours of the day. As the books are not allowed to be taken from the room, this library is particularly helpful to graduate students when they wish to refer to some authority which is temporarily withdrawn from the University library.

THE HISTORICAL SEMINARY ROOM, No. 10, White Hall, contains a reference library to which graduate students may have access at all hours. This library contains more than a thousand volumes.

III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE

EDWARD L. CURTIS, Ph.D., D.D. FRANK C. PORTER, Ph.D., D.D.
 BENJAMIN W. BACON, Litt.D., D.D. FRANK K. SANDERS, Ph.D.
 WARREN J. MOULTON, B.D., Ph.D. M. WOŁODARSKY.

HEBREW

Professor CURTIS :—

- 1 *Elementary Hebrew.* 5 hrs.
 The year's work includes a mastery of the elements of Hebrew
 and the translation of Genesis and of Exodus i-xxiii.
 [Tuesday and Saturday, 11.30 A. M.]
- 2 *The Book of Job.* 1 hr.
 The grammatical and historical exegesis of the Hebrew text.
 Lectures and recitations.
 [Monday, 5 P. M.]
- 3 *The Five Megilloth.* 1 hr.
 The grammatical and historical exegesis of the Hebrew text.
 Lectures and recitations.
 [Omitted in 1899-1900.]
- 4 *Selections from the Psalter.* 2 hrs. 1st term.
 The grammatical and historical exegesis of the text, with atten-
 tion to New Testament interpretation and homiletical application.
 [Tuesday and Friday, 10.30 A. M.]
- 5 *The Book of Isaiah.* 1 hr. 2d term.
 The grammatical and historical exegesis of the Hebrew text.
 [Wednesday, 10.30 A. M.]
- 6 *Readings in Unprinted Hebrew Texts.* 1 hr.
 [Omitted in 1899-1900.]

Professor SANDERS :—

- 7 *Hebrew Poetical Literature.* 1 hr.
 A survey of the entire field of Hebrew poetical literature,
 with emphasis upon the relation of form to interpretation,
 accompanied by lectures on Semitic poetry.
 [Omitted in 1899-1900.]

8 *Hebrew Syntax.* 1 hr.

A careful study of the principles of Hebrew Syntax with references to the standard discussions and with some attention to comparative syntax. During the year a critical reading of a variety of passages with especial reference to a syntactical interpretation.

[Tuesday, 3 P. M.]

9 *Textual Criticism of the Old Testament.* 1 hr.

A close textual study of some one of the Minor Prophets, making use of the apparatus of the lower criticism to restore the original text. At the beginning and at the close of the year's work lectures are given on the apparatus, methods, and history of O. T. criticism.

[Omitted in 1899-1900. Similar work is offered in course 46.]

Dr. MOULTON :—

10 *Elementary Hebrew.* 2 hrs.

A study of the elements of the Hebrew language in connection with the reading of Genesis i-viii and of selected passages of easy Hebrew.

[Tuesday and Friday, 3 P. M., 178 Lyc.]

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11 *Advanced Hebrew.* 2 hrs.

A course which continues course 10 and carries the student as far as the first year of Hebrew in a theological seminary. It includes a thorough review of the grammar, and the careful reading of the books of Samuel, and of portions of the Minor prophets. In the second term two hours of sight reading will count as one of these hours.

[Wednesday and Thursday, 3 P. M.]

OTHER SEMITIC LANGUAGES

Professor SANDERS :—

- 12 *Arabic Poetical and Philosophical Literature.* 2 hrs.

The first half of the year is devoted to the *Mu'allaqāt* and other poetical literature, read both with and without the unpointed commentary. In the second half of the year the class makes constant use of the valuable Salisbury collection of mss. and texts in the University library. Lectures on Arabic literature are given at intervals throughout the year.

[Friday, 8–10 P. M.]

Dr. MOULTON :—

- 13 *Elementary Syriac.* 2 hrs.

The principles of the language with reading of selections from the New Testament, Barhebraeus, etc.

[Tuesday and Friday, 4 P. M., 175 Lyc.]

- 14 *Advanced Syriac.* 2 hrs.

A continuation of course 13.

[Omitted in 1899–1900.]

- 15 *Biblical Aramaic and Aramaic of the Targums.* 2 hrs.

[Omitted in 1899–1900.]

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- 16 *Elementary Arabic.* 2 hrs.

During the first term the principles of the language are mastered in connection with the careful study of the Arabic version of *Genesis i–iii*. From Christmas until Easter the class reads in easy Arabic. After Easter selected *Suras of the Qur'ān* are carefully read. In connection with these, lectures are given by the instructor on early Arabian civilization, Arabic literature, the structure and general contents of the *Qur'ān*, and the history of Islam.

This course affords a thorough introduction to classical Arabic. It is valuable to one who is interested in thorough Semitic study or in Comparative Religion, and is only moderately difficult for one who has already studied Hebrew.

[Monday and Thursday, 4 P. M.]

- 17 *Arabic Prose Literature.* 2 hrs. 1st half-year.
 A rapid reading of selections from the Arab historians and from the *Thousand and One Nights*, followed by a close study of the 'Ajurrāmiya or the *Kitāb al Aghāni*. Lectures are given on the history of Islām.
 [Monday and Thursday, 11.30 A. M.]

- 18 *The Qur'ān.* 2 hrs. 2d half-year.
 Interpretation of the early Meccan suras and of selections from those of other periods, accompanied by a study of the life of Muhammad.
 [Monday and Thursday, 11.30 A. M.]

- 19 *Elementary Assyrian.* 2 hrs.
 The year's work includes the mastery of the more common cuneiform signs, the principles of the language, the rapid reading of much transliterated material, the careful reading of selected portions of the texts of Tiglathpileser, Shalmaneser, and Sennacherib in the cuneiform, together with lectures on the outlines of Assyro-Babylonian history and literature.
 [Tuesday and Friday, 9.30 A. M.]

- 20 *Assyrian and Babylonian Inscriptions.* 2 hrs. 1st half-year.
 Selected inscriptions from the annals of the later Assyrian kings, and of the Neo-Babylonian empire, the Creation and Deluge tablets, etc.
 [Tuesday and Friday, 8.30 A. M.]

- 21 *Assyro-Babylonian History and Literature.* 2 hrs. 2d half-year.
 A rapid reading with the use of Schrader's transliterated texts of the whole range of Babylonian and Assyrian historical inscriptions, the object being to gain a familiarity with the literature and the history, and a critical estimate of the relation of one to the other.
 [Tuesday and Friday, 8.30 A. M.]

- 22 *Semitic History and Philology.* 2 hrs.
 A brief historical survey of Semitic peoples and languages.
 [Friday, 2 to 4 P. M.]

- 23 *Ethiopic or Phoenician.* 2 hrs.
 [Omitted in 1899-1900.]

HEBREW LITERATURE

Professor CURTIS:—

- 24 *Ancient Traditions and History of the Jewish People.* 1 hr.
 Studies in history and archaeology with the view of determining the meaning and historical value of the Biblical records.
 [Thursday, 8.30 A. M.]
- 25 *Analysis and Exposition of Isaiah, Jeremiah, and Ezekiel.*
 (English Bible.) 2 hrs. 2d term.
 [Tuesday and Friday, 11.30 A. M.]
- 26 *Old Testament Introduction.* 1 hr.
 A brief survey of the history of the canon, text, and versions, followed by special introduction to the Hexateuch and remaining Old Testament books. Lectures.
 [Monday, 11.30 A. M.]

Professor PLATER:—

- 27 *Biblical Theology of the Old Testament.* 2 hrs.
 A history of the religion of Israel from its beginning to the time of Christ. Special attention is given to the work and teachings of the several Prophets, to the significance of the Exile, and to the nature and history of post-exilic Judaism.
 [Wednesday and Saturday, 11.30 A. M.]
- 28 *Biblical Theology of the New Testament.* 3 hrs.
 The teaching of Jesus is examined in its individuality and in its historical relations and significance. The theology of the Apostolic age is then studied, with special reference to the sources, character, and influence of the thought of Paul.
 [Tuesday, Thursday, and Friday, 8.30 A. M.]
- 29 *Hellenistic Jewish Literature.* 1 hr.
 Readings from the early Hellenistic literature and from Philo, with special reference to the relation of Hellenistic to Palestinian Judaism, and its influence on early Christian thought.
 [Friday, 5 P. M.]
- 30 *Palestinian Jewish Literature.* 1 hr.
 A course similar in character to course 29.
 [Omitted in 1899-1900.]

- 31 *The Biblical Doctrine of the Spirit.* 1½ hrs.
An investigation course for the historical study of the doctrine
of the Spirit in the Old and New Testaments.
[Thursday, 11.30 A. M.]

Professor BACON :—

- 32 *Prolegomena to the New Testament.* 1 hr.
Lectures on philological and historical apparatus for New
Testament exegesis, textual criticism, and history of the New
Testament canon.
[Saturday, 8.30 A. M.]

- 33 *The Pauline Epistles.* 3 hrs. 1st term.
Grammatico-historical exegesis of Galatians and Ephesians
with comparison of the Pauline system.
[Tuesday, Wednesday, Friday, 8.30 A. M.]

- 34 *The Gospel of Mark.* 3 hrs. 2d term.
Historico-critical exegesis of the Gospel of Mark, with com-
parison of the synoptic tradition.
[Tuesday, Wednesday, Friday, 8.30 A. M.]

- 35 *The History of New Testament Literature.* 2 hrs.
Mondays, critical readings of the Book of Acts with applica-
tion of the principles of historical and documentary criticism.
Thursdays, lectures on special introduction to the several New
Testament books.
[Monday, Thursday, 8.30 A. M.]

- 36 *The Teachings of Jesus.* 2 hrs.
Comparison of the Synoptic and Johannine tradition of the
teaching of Jesus. *Seminary* method.
[Thursday, 4-6 P. M.]

- 37 *Sight-Reading of the New Testament.* 2 hrs.
Translation and condensed comment on books not read in the
course. Open to all students in the University.
[Tuesday, 4-6 P. M.]

Professor SANDERS :—

- 38 *Biblical Literature (Pre-exilic).* 2 hrs.
A constructive survey of the Old Testament as history and
literature to the Babylonian exile, 586 B. C., each book being

considered, as far as possible, in its appropriate chronological connection. The history of the Hebrew people is treated both as an integral part of Western Asiatic history and as a history of religious development. The course aims to promote (1) a thorough but general familiarity with the contents of the English Old Testament, (2) a realization of the significance of Hebrew history, (3) an appreciation of the Bible as a noble literature, and (4) an intelligent attitude towards many problems raised by Biblical criticism. Nearly two-thirds of the Old Testament is covered in the course of the year.

[Wednesday and Saturday, 9.30 A. M.]

39 *Biblical Literature (Post-exilic).* 2 hrs.

A survey of Biblical history and literature from the period of the exile, 586 B. C., to the close of the first Christian century, including the books of the Old Testament not considered in course 38, some apocryphal literature and the whole of the New Testament. This course is complete in itself, while, with course 38, it covers the whole Bible, and the whole range of Asiatic history down to the Roman domination, as far as it relates to Biblical history.

Students in both courses have access to a carefully selected reference library and to much illustrative material.

[Tuesday and Friday, 10.30 A. M.]

40 *English Bible Seminary.* 2 hrs.

An investigation course, intended to train men for patient and accurate investigation of Biblical questions.

The course is very informal, the class meeting at regular intervals to report and compare results of individual study of themes assigned by the instructor.

[Wednesday, 4-6 P. M.]

41 *Messianic Prophecy.* 1 hr.

A survey of the Messianic passages in the Old Testament, so far as to show the historical development of the conception and the various forms in which it was embodied.

[Omitted in 1899-1900.]

42 *The Minor Prophets.* 1 hr.

A detailed study of each of the twelve Minor Prophets taken in chronological order, in connection with the survey of the general subject of Prophecy.

[Tuesday, 2 P. M., 184 Lyc.]

Mr. MOULTON :—

- [43] *Studies in the Gospels.* 1 hr.
A survey of the characteristics of the gospels which throw light on their origin and interpretation, followed by a study of their distinctive contents, especially the parables of Jesus.]
Omitted in 1899-1900.
- 44 *The Pauline Epistles.* 1 hr.
A detailed study of the principal epistles of Paul taken in the probable order of writing.
[Thursdays, 2 P. M.]
- 45 *Maccabean History and Literature.* 1 hr.
A survey of the history and literature of the period from the death of Alexander the Great, 323 B. C., to the conquest of Palestine by Pompey, 63 B. C.
[Wednesday, 10.30 A. M.]
- 46 *The History of the LXX and its Use in Criticism.* 2 hrs. 1st half-year.
The history of the Alexandrian version of the Old Testament and the reading of Samuel or Kings to illustrate its value in textual study.
[Wednesday, 8.30 A. M. and Friday, 11.30 A. M.]
- 47 *Reading of Theological German.* 1 hr.
Reading of Jülicher's *Die Gleichnisreden Jesu*, I Thl.
[Thursday, 3 P. M.]

Mr. WOŁODARSKY.

- 48 *Readings in Post-Biblical Jewish Literature.* 2 hrs.
A sight reading course in Rabbinic and Talmudic literature with discussions of the later Jewish interpretation of Hebrew law.
Students in this course must have gained a working knowledge of Hebrew and Aramaic.
- 49 *Modern Hebrew Literature.* 1 hr.
The class will read some standard historical novel by a modern writer, affording excellent practice in the reading of Hebrew and an insight into Jewish life and ideas.
Only a good elementary knowledge of Hebrew is necessary in this course.

For courses in Hellenistic Greek compare the announcement of the Department of Classical Philology.

THE SEMITIC AND BIBLICAL CLUB, composed of the instructors, the students who are studying for a degree, and others who are interested in the work, holds stated monthly meetings at which papers on subjects of interest to Biblical students are presented and discussed.

IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY

TRACY PECK, M.A.	HENRY P. WRIGHT, Ph.D., LL.D.
BERNADOTTE PERRIN, Ph.D., LL.D.	THOMAS D. SEYMOUR, LL.D.
EDWARD P. MORRIS, M.A.	HENRY R. LANG, Ph.D.
THOMAS D. GOODELL, Ph.D.	E. WASHBURN HOPKINS, Ph.D.
HORATIO M. REYNOLDS, M.A.	CORNELIUS L. KITCHEL, M.A.
JAMES J. ROBINSON, Ph.D.	HANNS OERTEL, Ph.D.
CECIL K. BANCROFT, B.A.	CHARLES S. INGHAM, Ph.D.
JAMES W. D. INGERSOLL, Ph.D.	ARTHUR L. WHEELER, Ph.D.
T. WOOLSEY HEERMANCE, Ph.D.	

GREEK

Professor PERRIN :—

- *₁ *Aristophanes, Thucydides, and Plutarch as Sources for Greek History.* 2 hrs.

A comedy of Aristophanes (*The Knights*), a book of Thucydides (Book iv), and a "Life" of Plutarch (*Nicias*) will be read, paying due regard to artistic form and literary type, but placing special stress on the method of determining those characteristics which make these authors trustworthy or untrustworthy historical sources.

[Tuesday and Friday, 9.30 A. M., 10 Phelps Hall,]

- *₂ *Outline Survey of Ancient History.* 1 hr.

Lectures, based on manual study, outlining and emphasizing such general features of ancient history as are most valuable for the intelligent prosecution of mediæval history.

[Wednesday, 9.30 A. M., 15 Phelps Hall.]

Professor SEYMOUR :—

- 3 *Epic Poetry.* 3 hrs.

Introduction to the critical study of Homer. Lectures on the history of Homeric study, Epic poetry, the composition and transmission of the poems, life in the Homeric times in its various aspects; Homeric language and verse. Followed by a familiar but critical interpretation (and exercises in interpretation and criticism) of portions of the *Odyssey*, and of the later Greek epics.

[Omitted in 1899-1900.]

- 4 *Pindar and Bacchylides.* 2 hrs.
The odes of Pindar and Bacchylides are studied with specially qualified students, with exercises in the critical treatment and interpretation of the text, as a Greek *seminary* course.
[Omitted in 1899-1900.]
- 5 *The Greek Orators.* 3 hrs.
A study of Greek Oratory, beginning with the orations of Isaeus, and including some of the private orations of Demosthenes, with reference to Athenian life and law, as well as to the development of Attic eloquence.
[Omitted in 1899-1900.]
- 6 *Aeschylus.* 3 hrs.
The extant plays of Aeschylus are read. The instructor interprets the *Prometheus* and parts of other plays. The members of the class later interpret in turn.
[Monday and Thursday, 8.30 to 10 A. M.]
- 7 *Plato.* 3 hrs.
The *Republic*, and the portions of the other dialogues which are most important for its elucidation.
[Wednesday, 4.30 to 6 P. M., and Friday, 3.30 to 5 P. M.]
- *8 *Greek Testament.* 1 hr.
A philological study of St. Paul's Epistles to the Corinthians, and the chief characteristics of the Hellenistic diction.
- 9 *History and Encyclopaedia of Greek Studies.* 1 hr. 1st half year.
Fifteen familiar lectures, with special attention to bibliography.
- *10 *Plato and Aristotle.* 2 hrs.
(a) The *Phaedo* of Plato, with an introduction to the literary and philosophical study of this author.
(b) The *Nicomachean Ethics* of Aristotle, Books i-iv and x, with a study of Aristotle's methods of research and statement.
[Omitted in 1899-1900.]

Professor GOODELL :—

- 11 *Rhythmic and Metric.* 2 hrs.

An introduction to the subject, about equally divided between lectures and practice in reading. Examples will be so selected from various authors that this course may supplement those in the Greek poets and in Horace and Catullus.

[Wednesday and Friday, 10.30 A. M., 15 Phelps Hall.]

- 12 *Sophocles.* 3 hrs.

Reading of the seven extant plays with special attention to the artistic form, including the poet's literary style, treatment of the myths, management of the action, use of meters, and the like.

[Omitted in 1899-1900.]

Professors REYNOLDS and OERTEL :—

- 13 *Greek Inscriptions.* 3 hrs.

a. *Attic Inscriptions*, with reference to the history of the alphabet, grammatical peculiarities, formulae, and historical content. The student is familiarized with the reading of inscriptions in their original form (by means of paper squeezes).

b. *Greek Dialect Inscriptions*. The more important dialect inscriptions are read together with a brief sketch of the phonology of each dialect. Cauer's *Delectus Inscriptionum Graecarum* is used as a text-book.

[Omitted in 1899-1900.]

Professor REYNOLDS :—

- 14 *Aristotle's Poetics. Literary Criticism in Ancient Times.* 1 hr.

Interpretation of the *Poetics* and parts of the *Rhetoric*, with selections from Plutarch, Pseudo-Longinus, and Lucian.

- 15 *Late Greek Poetry.* 1 hr.

This course includes a survey of Alexandrian and later Greek poetry. Reading of the mimes of Herondas, with selections from the Anthology, and from the hymns of Callimachus, and other fugitive poetry.

[Omitted in 1899-1900.]

- *16 *Euripides.* 2 hrs.

A reading course with reference to Euripides's poetic and dramatic quality. Five or six plays will be read. Discussion of the poet's relation to his own times, of his style, metres, dramatic innovations, and influence on the Roman and the modern dramatists, with occasional lectures.

[Omitted in 1899-1900.]

- *17 *Lucian.* 2 hrs.

A general reading course in prose, with discussion of the life and times of Lucian and of his influence upon modern literature. The *Dream*, *Charon*, *Timon*, *Angler*, and *True History* will be read, with many minor pieces, including the *Dialogues of the Gods* and *Dialogues of the Dead*. The Teubner text-edition will be used together with Williams's *Selections from Lucian*.

[Tuesday and Friday, 10.30 A. M., 14 Phelps Hall.]

Mr. KITCHEL :—

- *18 *The Sicilian Invasion.* 2 hrs.

The Sixth and Seventh Books of Thucydides will be read. The relation of this great catastrophe to the preceding and the subsequent history of the Athenian empire will be emphasized ; the geography and topography involved will be carefully considered, and the author will be compared with the historians who preceded and followed him.

[Monday and Thursday, 9.30 A. M., 8 Phelps Hall.]

- *19 *The Choephori of Aeschylus, the Electra of Sophocles, and the Electra of Euripides.* 2 hrs.

These plays, together with the *Frogs* of Aristophanes, will be read and carefully compared, with the intent of noting the development of the drama thus exhibited. The points of similarity and dissimilarity between the ancient and the modern drama will be sought for.

[Omitted in 1899-1900.]

————— :—

- 20 *Modern Greek.* 1 hr.

A practical introduction to the subject, using E. Rizo-Rangabé's *Modern Greek Method* as outline, with some reference to other manuals. Particular attention will be given to the colloquial language.

Dr. HEERMANCE :—

21 *Greek Archaeology.* 2 hrs.

a. The prehistoric finds in the Aegean basin will be studied in the original publications and the results combined to obtain a picture of the Mycenæan civilization.

b. An outline of the history of Greek sculpture from its beginnings down to the Roman period will be given in informal lectures. Considerable reading will be assigned and the student will be referred constantly to the ancient literary sources for the subject, both Greek and Latin, and will be aided in acquainting himself with as large a number of existing works of sculpture as possible, through various forms of reproduction.

c. As supplementary to the foregoing, there will be discussed in summary fashion the following branches of Greek archaeology: architecture, painting, ceramics, terra-cottas, bronzes, and coins.

[Tuesday and Thursday, 3 P. M.]

LATIN

Professor PECK :—

22 *Lucretius and Dialogus of Tacitus.* 2 hrs.

[Saturday, 9.30 to 11.30 A. M., 21 Phelps Hall.]

23 *Latin Philology.* 1 hr.

In this course such features of the language are studied as its historical development and decay, relations to other languages, forms and syntax, pronunciation, adaptation to literature, etc.

[Wednesday, 9.30 A. M., 21 Phelps Hall.]

***24 *The Letters of Pliny and Cicero.* 2 hrs.**

In this course prominence will be given to the study of Roman private antiquities.

[Monday and Thursday, 10.30 A. M., 21 Phelps Hall.]

***25 *Hexameter Poetry.* 2 hrs.**

Development of poetic forms and styles in Latin, with studies in Ennius (the Annals), Lucretius, Vergil (the Georgics), and Horace (the Epistles).

[Monday and Thursday, 11.30 A. M., 21 Phelps Hall.]

- *26 *Roman Archaeology.* 1 hr.

This course is open only to those undergraduates who have done superior work in Latin.

[Wednesday, 10.30 A. M., 21 Phelps Hall.]

- [27 *Cicero (Brutus), Quintilian (x and xii), and Tacitus (Dialogus).* 2 hrs.

[Omitted in 1899-1900.]

- 28 *Tacitus (Annals, i-vi) and Suetonius (Augustus and Tiberius).* 2 hrs.

[Omitted in 1899-1900.]

- 29 *Early Latin.* 2 hrs.

[Omitted in 1899-1900.]

Professors H. P. WRIGHT and INGERSOLL:—

- *30 *Latin Lyric Poetry.* 2 hrs.

Books iii and iv of the *Odes* of Horace; selections from Catullus: Latin Hymns.

[Monday and Thursday, 9.30 A. M., 11 Phelps Hall.]

- *31 *Latin Satire and Comedy.* 2 hrs.

Selections from Juvenal and Martial, with special reference to a study of the private life of the Romans.

Plautus—Three or four plays, with study of literary history, form, and influence.

[Omitted in 1899-1900.]

Professor MORRIS.

- 32 *Plautus.* 1 hr.

Lectures introductory to the study of Plautus, dealing with his life, the presentation of the plays, the history of the text, the history of Plautine criticism, the language, and the meters.

[Omitted in 1899-1900.]

- 33 *Plautus.* 2 hrs.

Critical study of a single play; probably the *Bacchides*.

34 *Historical Syntax.* 2 hrs.

Lectures on the history of work in Latin Syntax during this century and on the principles and methods of the historical investigation of the modes and tenses ; discussion of text-books and of a few typical specimens of work in this field ; a partial outline of the syntax of the modes and tenses from the historical point of view.

The lectures are followed by a study of the *qui* clause, the material for which is collected by the students who take the course.

[Omitted in 1899-1900.]

*35 *Vergil.* 2 hrs.

An introduction to Vergil, intended to give students who may expect to teach Latin an acquaintance with the best editions and commentaries and with works on special topics, the life of Vergil, the Aeneas legend, relation to Greek poets and to earlier Roman poetry, mythology, Vergil in the Middle Ages. Parts of the text will be carefully interpreted and other parts will be translated and compared with English versions, and there will be practice in metrical reading.

*36 *Cicero.* 2 hrs.

An introduction to the orations of Cicero, dealing chiefly with the structure of the speeches and their historical interpretation, with some reading in Cicero's letters and rhetorical works. Especially for students who may expect to teach Latin.

[Omitted in 1899-1900.]

Professor LANG.

37 *Low Latin.* 1 hr.

The aim of this course, which extends over two years, is to give an historical account of the popular speech of Rome and of the Roman provinces, and also an outline of its grammar and syntax, as it is disclosed to us by classical Latin, the testimony of the Latin grammarians, inscriptions, mediæval documents, and the consensus of the Romance languages.

The first year's course is taken up with lectures on the history and the grammar of Low Latin and the reading of a Low Latin text. For the present the following is used: J. F.

Gamurrini, S. *Silviae Aquitanæ Peregrinatio ad Loca Sancta*. Editio altera. Romæ, 1888. Students should come provided, at the beginning, with E. Gorra's *Lingue neolatine* (Milano, Hoepli, 1894).

[Wednesday, 3 P. M.]

38 *Low Latin* (second year). 1 hr.

The second year's course is taken up with the interpretation of Low Latin texts by the student and the study of special subjects assigned by the instructor.

[Thursday, 2 P. M.]

Dr. ROBINSON :—

39 *Roman Law*. 1 hr.

A course intended to give to graduate students and prospective teachers of Latin a general survey of this department of Roman thought.

The work, conducted chiefly by lectures, will cover the history of Roman law, bibliography, sources, law-making powers, and the investigation of those legal institutions which aid in understanding the life and literature of the Roman people.

Extracts from Latin law-writers will be read rapidly for the subject matter and to gain an acquaintance with the legal style.

*40 *Roman Law*. 2 hrs.

This course is intended to benefit those who desire an insight into Roman law as part of a liberal education as well as those who contemplate the study of law as a profession. The work consists of lectures, assigned readings, and recitations upon lectures and readings.

The text of the *Institutes* of Justinian will be translated, the instructor explaining particularly the technical expressions of lawyer's Latin, and lecturing upon the titles which embrace the most important principles of Roman jurisprudence. The study of the *Institutes* is prefaced by lectures upon the history of Roman legislation and supplemented by reference to selected titles of the *Digest* and the commentaries of Gaius.

The Teubner text of *Justiniani Institutiones*, edited by Huschke, is used in the class-room.

[Tuesday and Friday, 10.30 A. M., 9 Phelps Hall.]

Assistant Professor OERTEL :—

- 41 *The Italic Dialects* (first year). 1 hr.
 After a brief survey of the peoples and languages of ancient Italy, the more important Oscan and Sabellic inscriptions are read and interpreted. Students should provide themselves with v. Planta's *Grammatik der oskisch-umbrischen Dialekte*, 2 vols.
- 42 *The Italic Dialects* (second year). 1 hr.
 Reading and interpretation of the more important Umbrian inscriptions, followed by a brief systematic exposition of Oscan and Umbrian Phonology and Morphology.
- 43 *Practice in the Writing of Latin Prose.* 2 hrs.
 This course is intended for advanced students in Latin, and should be taken only by those who have taken course 48 in Latin Composition, or its equivalent. Students should provide themselves with H. Menge's *Repetitorium der lat. Syntax u. Stilistik*, 6th ed., 1890, and his *Kursgefasste latein. Synonymik*, 3d ed.

Mr. BANCROFT :—

- *44 *Terence.* 2 hrs.
 1st term. *Terence.*
 Rapid reading of several of the plays of Terence and more careful study of the *Phormio*.
 2d term. *Ovid: Fasti.*
 Studies in Roman Topography.
 [12.30 P. M., 19 Phelps Hall.]

Assistant Professor INGERSOLL :—

- 45 *Latin Comedy.* 1 hr.
 About a dozen plays of Plautus, two or three of Terence, and the principal fragments from other writers of Latin Comedy. A reading course, intended to supplement the critical work on Plautus in other courses.
 [Omitted in 1899-1900.]
- 46 *Latin Tragedy.* 1 hr.
 The extant plays and fragments will be read. History of Latin Tragedy.
 [Omitted in 1899-1900.]

*43 *Latin Literature*

2 hrs.

A general survey of the whole field aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, both as to form and as to subject and to characterize the several periods of the literature in the light of the changing conditions under which the development took place. Lectures, illustrative readings, and direction of the student's private reading. Designed especially for those who wish to take their bearings in preparation for special work in this department and for those who, while their chief interest lies in other departments of study, desire to gain a general notion of the range and leading characteristics of a literature in which their previous reading has been more or less desultory.

[Tuesday and Friday, 2.30 & 4.15, Phelps Hall.]

Dr. A. L. WHEELER:—

*45 *Latin Composition*

1 hr.

During the first term the work consists of a rapid review of Latin syntax with oral and written practice in the principles involved. In the second term the higher principles of Latin writing will be studied in connection with some Latin prose text supplemented by a series of lectures on style. Throughout the year written exercises will be read and criticised in class.

The course is intended chiefly for those graduates and undergraduates who expect to teach.

[Tuesday and Thursday, 3.7. M., in Phelps Hall.]

*49 *Latin Elegy*

2 hrs.

This course aims to trace historically the development of elegy in Latin. Selections from Tibullus, Propertius, and Ovid will be read, supplemented by occasional lectures. Some outside English reading will be required.

[Monday and Friday, 2.00 & 2.15, Phelps Hall.]

Dr. INGHAM:—

*50 *Roman History from Tiberius to Trajan*

2 hrs.

An examination of the sources for the history of the period. Selections from Dio Cassius, Tacitus, Suetonius, Plutarch, Pliny, and Josephus will be read. The works of modern historians will be examined with reference to their treatment of these sources.

Each student will be expected to collect and classify the facts which are furnished by the selections on some one topic.

For a course in Latin sounds and forms, see course 61.

INDO-IRANIAN PHILOLOGY AND LINGUISTICS

Professor HOPKINS :—

51 *Elementary Sanskrit.* 2 hrs.

Instruction in Sanskrit, beginning with Whitney's *Sanskrit Grammar*, and passing on to Lanman's *Reader*.

The elementary course in Sanskrit is designed especially for classical students, but it may be taken with profit by students of German or English, especially by those who intend to become teachers, and it is indispensable for those who pursue studies in the Comparative Grammar of Greek and Latin. The course is continued through the year, the first term being devoted mainly to the grammar, the second to interpretation. By the end of the year the student will have read portions of the classical and Vedic selections in Lanman's reader, and be fitted to pursue the work of the advanced course in the following year. On the other hand he will have attained such familiar acquaintance with Sanskrit grammatical forms and syntactical structure, as greatly to aid his comprehension of parallel phenomena in other Aryan languages.

[Tuesday and Thursday, 3 P. M.]

52 *Advanced Sanskrit.* 2 hrs.

Selections from the Rig-Veda and Brahmanic texts.

This course is intended for those that have already had at least one year's instruction in Sanskrit. It is addressed particularly to students of literature, social institutions, and religion. The first half of the year will be occupied with reading selections from the Vedic Hymns, which are not only a priceless heirloom of early religious thought, but also a mine of information in regard to early institutions. The special topic of the second term's reading will be the philosophical portions of the first Brahmanic works and Upanishads, the earliest Aryan prose.

[Tuesday and Thursday, 4 P. M.]

53 *History of Sanskrit Literature.* 2 hrs.

This course consists in a review of Vedic and classical Sanskrit literature from the earliest times to the Puranic period, with extracts read by the instructor to illustrate the various phases of literary development. It is not absolutely necessary that the student should be able to read Sanskrit, since the illustrations are presented in translation; thus those who desire a general knowledge of Sanskrit literature can follow the lectures. But

as it is expected that those who take this course will ordinarily have some knowledge of Sanskrit, the translation is made with reference to these students especially, and they are provided as far as possible with the original texts, as read from day to day. In this way this course forms also a reading-exercise parallel to that in Advanced Sanskrit.

[Omitted in 1899-1900.]

54 *Introduction to Comparative Syntax.* 1 hr.

This course consists in an analysis of the syntactical facts presented by the Aryan languages, particularly Sanskrit, Greek, Latin, and early German. It is intended especially for students of these languages who desire a more thorough acquaintance with the problems of comparative syntax. To solve these problems a knowledge, if not of the Sanskrit language, at least of Sanskrit syntactical phenomena is necessary, and the lectures are accordingly planned with a view to explain these phenomena to those who have not studied Sanskrit as well as to those who have done so.

[Wednesday, 3 P. M.]

55 *Avestan Language and Literature.* 1 hr.

Intended for those who desire to begin the study of Zoroaster's scriptures, the so-called Zend-Avesta. Avestan, or Zend, is easy for advanced Sanskrit students, and besides offering much of interest in respect of literature and religion, is also valuable to students of linguistics and syntax.

Assistant Professor OERTEL :—

56 *Linguistics.* 2 hrs.

An introduction to the scientific study of language, intended for students of the classics as well as for those of the modern languages. The course deals with the general principles and chief problems of linguistic science, such as the methods of philological investigation, the manner and causes of phonetic and semantic changes, theories regarding the origin of language, the relation of philology to kindred sciences, etc. Much stress will be laid on the psychological aspect of linguistic phenomena. Paul's *Principien der Sprachgeschichte*, 3d ed. (an Engl. translation of the same German book was published, but is now out of print) is read and critically examined. The course consists of lectures, but requires some outside collateral reading.

57 *Phonetics.*

1 hr.

An introduction to general Phonetics on the basis of Sievers's *Grundsätze der Phonetik*, and its application to the English, German, and Latin sound-systems. Sweet's *Primer of Phonetics*, Laura Soames's *Introduction to Phonetics*, Vietor's *Elemente der Phonetik und Orthoëpie des Deutschen, Englischen u. Französischen*, O. Bremer's *Deutsche Phonetik*, and Seelmann's *Die Aussprache des Latein*, are chiefly used, and private reading in these is required. The course is intended to furnish a basis for the study of the phonology of the various languages.

58 *Latin Grammar.*

2 hrs.

A resumé of the chief results of the modern comparative treatment of Latin sounds and inflections, with constant reference to the other Italic dialects. Lindsay's *Latin Language*, 1894, should be in the hands of the students, and considerable collateral reading in Henry's *Short Comparative Grammar of Greek and Latin*, Bechtel's *Hauptprobleme der indogermanischen Lautlehre*, and Brugmann's *Griechische Grammatik*, 2d ed. (in Iwan Müller's *Handbuch*), is required. Some knowledge of Sanskrit is very desirable for this course.

For courses in Greek Philosophy, see courses I, 20-23.

Graduate students of this University, with the approval of the classical instructors, are admitted to the free enjoyment of the privileges of the American School of Classical Studies at Athens.

THE CLASSICAL CLUB

The Phelps Memorial Building is assigned to the use of the Classical Department of the University. In addition to twelve ordinary class-rooms, three seminary rooms, and offices for instructors, it contains a large apartment for the library and reading-room of the Classical Club. This room is the headquarters of advanced students in classical philology, and furnishes to them the advantages of a good private library. It already contains more than twenty-five hundred volumes of texts, commentaries, works

on antiquities, etc., as a departmental library. The books most needed for the immediate work in the classical courses for the present year are to be found there. The recent gift to the University Library of the important library of Ernst Curtius, the distinguished archaeologist and historian, not only added to the philological and archaeological wealth of the main library, but also supplied 700 volumes (many of which are rare and expensive) for the immediate use of the Classical Club. The Club meets every Saturday and spends that evening in reading and discussing the work of some classic author, with reports and papers in the field of Greek and Latin Philology. During the year 1899-1900 the works of Catullus, Tibullus, and Propertius and the minor works of Xenophon will be studied.

V. MODERN LANGUAGES AND LITERATURES

THOMAS R. LOUNSBURY, LL.D.	JULES LUQUIENS, Ph.D.
HENRY A. BEERS, M.A.	ALBERT S. COOK, Ph.D., L.H.D.
HENRY R. LANG, Ph.D.	ARTHUR H. PALMER, M.A.
GUSTAV GRUENER, Ph.D.	WILBUR L. CROSS, Ph.D.
ROBERT L. TAYLOR, B.A.	WARREN A. ADAMS, Ph.D.
CHARLTON M. LEWIS, B.A., LL.B.	ROBERT N. CORWIN, Ph.D.
WILLIAM L. PHELPS, Ph.D.	RICHARD T. HOLBROOK, B.A.
FRANK H. CHASE, Ph.D.	EDWARD B. REED, Ph.D.

ROMANCE LANGUAGES

Professor LUQUIENS :—

- 1 *Early French Literature and Historical Grammar.* 2 hrs.
A study of the linguistic facts connected with the origin and formation of French from Latin ; reading from representative productions of the xith, xiith, and xiiith centuries.
[Tuesday and Friday, 5.00 P. M., E₁ O.]
- 2 *Medieval French Literature.* 1 hr.
A continuation of course 1, including a survey of the writings of the xiiith, xivth, and xvth centuries and a discussion of the linguistic changes during that period.
[Wednesday, 11 30 A. M., E₁ O.]
- 3 *French Literature of the xvith Century.* 2 hrs.
[Omitted in 1899-1900.]
- *4 *Systematic Readings in the French Writers of the sixth Century.* 2 hrs.
Reading of representative works beginning with V. Hugo and the French Romanticists and reaching as near the present day as time will allow. Comments and lectures will alternate with the reading. Open to students who have had two years of French.
[Tuesday and Friday, 10.30 A. M., E₁ O.]
- *5 *French Literature of the sixth Century.* 3 hrs.
This course covers the same ground as the preceding one, but is conducted in French, all exercises, written and oral, being intended to impart a command of the language as well as a knowledge of the literature.
[Monday, Wednesday, and Thursday, 10.30 A. M., E₁ O.]

- 6 *French Literature of the xviiith Century.* 2 or 3 hrs.
[Omitted in 1899-1900.]
- 7 *French Literature of the xviiiith Century.* 2 hrs.
A study of the evolution of French thought and literature as seen in the works of Voltaire, Montesquieu, J. J. Rousseau, etc.
[Monday and Thursday, 11.30 A. M., E. O.]
- *8 *Practice in writing and speaking French.* 2 hrs.
An advanced course in French grammar, translation and composition, conducted in French. Open to students who can satisfy the instructor of their fitness.
[Tuesday and Thursday, 9.30 A. M., E. O.]

Professor LANG.

- 10 *Provençal Language and Literature.* 2 hrs.
This course begins with lectures on the historical grammar of old Provençal, after which the origin and growth of Provençal lyric poetry, its style and metre, are studied in connection with the reading of selections from the works of the Troubadours. Students will come provided with Appel's *Provençalische Chrestomathie* (Leipzig, 1895), and Restori's *Histoire de la littérature provençale* (Montpellier, 1894).
[Monday and Wednesday, 10.30 A. M.]
- 11 *Provençal (second year).* 1 hr.
The second year's course is taken up with the interpretation of Provençal texts by the student and the study of special subjects, both literary and grammatical, assigned by the instructor.
[Monday, 3 P. M.]
- 12 *The Beginnings of Spanish Literature.* 1 hr.
This course comprises a study of the early literature of Castile previous to the xvth century, and its relations with the literatures of France and Italy. Gorra's *Lingua e letteratura spagnuola delle origini* is used as introduction to the work.
[Thursday, 10.30 A. M.]
- *13 *Dante's Life and Works.* 1 hr.
This is a strictly literary course, open only to those who have passed through course 12, or who shall otherwise satisfy the instructor of their fitness to take it.

After some introductory lectures on Italian poetry previous to Dante, and its relations to the literatures of Provence and of France, the *Vita Nuova* and selections from the *Divina Commedia* will be read and explained.

Students will provide themselves with A. D'Ancona's edition of *La Vita Nuova* (2d ediz., Pisa, 1884), Fraticelli's edition of *La Divina Commedia* (Firenze, 1886) and Scartazzini's *Companion to Dante* in Butler's translation (London, 1893).

[Saturday, 9.30 A. M., K, O.]

14 *Petrarch.* 1 hr.

This course consists in a study of Petrarch's *Rime* and of his influence as the leader of the humanistic movement. Portions of the *Rime* are read and explained in class, and additional reading and study are assigned to be done in private.

Students provide themselves with G. Rigutini's edition of *Le Rime* and T. Casini's *Le Forme metriche italiane*.

[Monday, 5 P. M.]

*15 *Spanish (Elementary Course).* 3 hrs.

In this course stress will be laid on the acquisition of a good pronunciation and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge, which is the leading aim of the instruction.

Knapp's *Spanish Grammar*; Alarcon's *El Final de Norma* and Perez Galdós's *Doña Perfecta* will be used as text-books.

[Monday, Wednesday, and Thursday, 9.30 A. M., K, O.]

*16 *Spanish Drama of the xvith and xviith Centuries.* 2 hrs.

This is a literary course, open only to such students as have passed through course 15 or who shall satisfy the instructor of their fitness by passing a special examination. Guillen de Castro's play *Las Mocedades del Cid* (edited by E. Mérimée, Toulouse, 1890) and *Select Plays of Calderon* (edited by Norman Maccoll, London, 1888) will be read, and lectures given on the origin and development of dramatic art in Spain.

[Omitted in 1899-1900.]

17 *Spanish Fiction of the xvith and xviith Centuries.* 2 hrs.

Study of the novel of the golden age of Spanish literature, based on the reading of selections from works of the sixteenth century, but especially on Cervantes's *Don Quixote* (edition of Garnier Hermanos, Paris, 1875).

Mr. HOLBROOK :—

- *18 *Italian (Elementary Course).* 3 hrs.

Stress will be laid on the acquisition of a good pronunciation and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge.

Grandgent's *Italian Grammar* and Grandgent's *Composition*; Bowen's *Italian Reader*; Clapin's edition of Silvio Pellico's *Le Mie Prigioni*; Baragiola's edition of Goldoni's *Burbero Benefico*; Pellico's *Francesca da Rimini*; Bianchi's edition of the *Vita di Benvenuto Cellini scritta da lui medesimo*.

[Tuesday, Wednesday, and Friday, 8.30 A. M., B. O.]

GERMANIC LANGUAGES

Professor PALMER :—

- 19 *Introduction to Germanic Philology.* 2 hrs.

A course introductory to the general study of Germanic philology, dealing with its history, methods, fields, and fundamental facts. The basis of the work will be Paul's *Grundriss der Germanischen Philologie*, of which portions will be read, discussed, and supplemented by informal lectures.

- 20 *Gothic.* 2 hrs.

An introductory course, especially for those who intend to study German or English historically, in the study of Gothic and its phonological relations to both earlier Indo-Germanic and to later Germanic languages. Braune's *Gotische Grammatik*, and Streitberg's *Gotisches Elementarbuch* or Wright's *Gothic Language Primer*, Heyne's *Ulfilas*, Streitberg's *Urgermanische Grammatik*, and Henry's *Comparative Grammar of English and German*.

- 21 *Old High German and Old Saxon.* 3 hrs.

A rather detailed course in the oldest German dialects and literature. Braune's *Althochdeutsche Grammatik* and *Althochdeutsches Lesebuch*, Gallée's *Altsächsische Grammatik*, Behaghel's *Htliand*.

- 22 *Old Norse (Icelandic).* 3 hrs.
Grammar, and reading in the Sagas and the Elder Edda.
[Omitted in 1899-1900.]

- *23 *Scientific German.* 2 hrs.
Rapid reading of extracts and monographs treating of subjects
in natural science.
[Omitted in 1899-1900.]

- *24 *Lyrics and Ballads.* 2 hrs.
Reading of a large amount of representative German lyric and
ballad poetry with critical study of characteristic features in
different authors and periods. The text-books will be Buch-
heim's *Deutsche Lyrik*, Buchheim's *Balladen und Romanzen*,
Busse's *Neuere Deutsche Lyrik*, White's *Deutsche Volkslieder*,
Kinzel's *Walther von der Vogelweide und Des Minnesangs
Frühling*.
[Omitted in 1899-1900.]

- *25 *History of German Literature, 1624-1832.* 2 hrs.
The development of German literature will be studied from the
time of Opitz to Goethe's death. The text-books will be :
Kluge's *Geschichte der deutschen National-Litteratur*, Scherer's
History of German Literature, Max Müller's *German Classics*,
and Hillebrand's *German Thought from the Seven Years' War to
Goethe's Death*.
[Monday and Thursday, 10.30 A. M., F. O.]

Professor GRUENER :—

- 26 *Middle High German.* 3 hrs.
Hartmann: *Der arme Heinrich* and *Iwein*. *Nibelungenlied*.
Selected poems of Walther von der Vogelweide. Selections
from Wolfram von Eschenbach's *Parsival*. Lectures and
papers.
[Omitted in 1899-1900.]

- 27 *German Literature of the Reformation Period
(1500-1624).* 3 hrs.
The development of German literature is studied from the
beginning of the Reformation to the time of Opitz. Charac-
teristic works of the important writers of the period are
read chiefly for literary purposes, though also with reference
to the political, social, and religious conditions of the times.

- *28 *Schiller, Works and Life.* 2 hrs.

Rapid reading of plays, poems, and prose writings of Schiller, with study of his life. The object of this course is to acquaint the student more fully with the vocabulary and style of standard German literature, and to present Schiller's character and influence as a writer and thinker.

[Tuesday and Friday, 9.30 A. M., F, O.]

Dr. W. A. ADAMS :—

- *29 *Prose of Modern German Historians and Critics.* 2 hrs.

Rapid reading of selections from history, political writings, and literary criticism. The object of this course is to acquaint the student more fully with the historical and critical vocabularies and styles.

[Tuesday and Thursday, 1st term, 5 P. M., 2nd term, 2 P. M., F, O.]

- *30 *Goethe, Works and Life.* 3 hrs.

One hour each week will be devoted to the shorter poems ; two hours to prose and longer poetical works. The course aims, as far as its limits will permit, to present Goethe through his works. Accordingly the selection of poems and other writings will be a chronological one. Of the longer works *Götz von Berlichingen* will be read first, in connection with which a study of *Der junge Goethe* will be made. *Iphigenie*, *Faust I*, and parts of *Faust II* will follow, with a study of the maturer Goethe. Discussion of the leading essays in English upon Goethe, *Conversations with Eckermann*, read in selections, and an estimate of Goethe as a man and writer, based chiefly upon the work done during the year, will end the year's work. Occasional lectures.

[Tuesday, Thursday and Saturday, 9.30, F, O.]

Assistant Professor CORWIN :—

- 31 *German Literary Criticism.* 1 hr.

A course of study in the development of the theories of poetry and the principles of literary criticism in Germany. The course consists of lectures, discussions, and readings based on the critical writings of Lessing, Herder, Schiller, Goethe, Schlegel, and Freytag.

[Saturday, 11.30 A. M.]

Professor PALMER :—

- 32 *Swedish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections are read from modern authors.

RUSSIAN

Mr. WOŁODARSKY.

- 33 *Elementary Russian.*

The first term will be given to the study of the elements of the language in connection with the reading of short stories by modern writers.

The second term will be given to the study of syntax in connection with the reading of one of Turgenev's works.

- 34 *Advanced Russian.*

A general course in Russian Literature in connection with the reading of a historical chrestomathy and with sight-reading in "On the Eve," by Turgenev and in "Master and Man" by Tolstoi.

ENGLISH

Professor LOUNSBURY :—

- 35 *The English Literature of the xivth Century.*

- 36 *The Early Victorian Era : Tennyson and his Contemporaries.* 2 hrs.

Professor BEERS :—

- *37 *Milton and his Contemporaries.* 2 hrs.

A course in the literature of the Stuart and Commonwealth period as related to the political and religious controversies of the time, and with Milton as the central figure. All of Milton's English verse will be read ; the *Epitaphium Damonis* and two of the Latin *Elegies* ; and several of his prose writings. Other authors represented will be Herbert, Clarendon, Marvell, Butler, and the Cavalier poets. Lectures and assigned reading in special topics, such as Little Gidding, the Siege of Basing House, Lord Falkland at Tew, the Latitudinarians, Elizabeth Stuart and the Palatinate, the Marquis of Montrose, etc.

Professor COOK :—

The strictly graduate courses offered below are given according to circumstances and the needs of the graduate students actually in attendance; and special attention is given to the supervision of individual research in any part of the general field.

38 *Encyclopædia and Methodology of English.* 1 hr.

This course is designed to acquaint the student with the more important branches of scholarship relative to the English language and literature, with a few of the representative books in each, and with the scope and method of research in this department.

[Wednesday, 4 P. M.]

39 *Theories of Poetry.* 2 hrs.

A course in the theories of poetry in general, and in the principles of criticism applicable to its various departments, as the epic, dramatic, and lyric. Discussions and papers on the basis of standard works, such as Aristotle's *Poetics*, Sidney's *Defense of Poesy*, Woodbridge's *The Drama*, Boileau's *Art of Poetry*, Lessing's *Laokoon*, and others of similar character. Reading of masterpieces to illustrate and extend the principles derived from theoretic works.

[Wednesday, 3 P. M.]

40 *General Course in Literature.*

Readings and informal comments by the instructor, with outlines of courses to be followed as a basis for examination. The selections will not be limited to English literature.

41 *Advanced Old and Middle English.* 2 hrs.

A survey of the subject for those who are not yet prepared for minuter specialization.

[Tuesday, 10 A. M.]

42 *Seminary in Literature.* 3 hrs.

A critical study of some representative writer or department of literature. In 1894-95, Ben Jonson was the author selected; in 1895-96, Browning; in 1896-97, Chaucer; in 1897-98, the Jacobean Drama; in 1898-99, Spenser.

[Alternate Mondays at 7 P. M.]

43 *Historical English Prosody.*

Schipper's *Englische Metrik* is adopted as the basis of study, but reference is made to other authorities.

*44 *Old and Middle English.* 2 hrs.

An elementary course in the beginnings and earlier development of the English language and literature. Reading is begun at the earliest practicable moment, and the study is made as literary in character as is consistent with a thorough grounding in the rudiments of the language.

[Monday and Thursday, 10.30 A. M.]

Assistant Professor CROSS :—

45 *English Prose Fiction.* 2 hrs.

The aim of this course is to present in outline the development of the English novel. Twenty-five or more prose fictions will be taken up in their logical order, and discussed in their relation to one another and the fiction of their time, both English and Continental. Among the books selected for 1899-1900 are the *Morte Darthur*, the *Arcadia*, *Clarissa Harlowe*, *Tom Jones*, *Mansfield Park*, *Waverley*, *Martin Chuzzlewit*, *Vanity Fair*, and *Adam Bede*.

[Tuesday and Thursday, 2 P. M.]

Assistant Professor PHELPS :—

*46 *Elizabethan Drama.* 2 hrs.

The English drama, from the mystery plays to the closing of the theatres in 1642, studied from both the literary and the dramatic point of view. Plays of the pre-Elizabethan period are read and briefly discussed, with the object of getting a historical background. Some plays of all the principal dramatists from 1580 to 1640, except Shakespeare, will be read: Marlowe, Ben Jonson, Dekker, Heywood, Chapman, Middleton, Beaumont and Fletcher, Webster, Ford, Massinger, Shirley. As a rule, one play will be read for each lesson.

47 *Elizabethan Literature.* 2 hrs.

Studies in the poetry and prose of the Elizabethan period, exclusive of the drama. Wyatt, Surrey, Ascham, Foxe, Painter, Lyly, Raleigh, Greene, Nash, Lodge, Marlowe, Hooker, Sidney, Spenser, Shakespeare, Davies, Drayton, Chapman, and others. Lectures, discussions, and preparation of special papers by members of the class.

*49 *TEENYSON AND THE PRESENT*

2 hrs.

The autumn term will be devoted to the study of Teennyson. Primarily all of his poetry will be read. His theory of the poet's art, his skill in technique, his artistic expression, and his representation of nineteenth century ideas will be studied in detail.

After Christmas, the complete works of Browning will be taken up, only those being omitted which are unnecessary in forming a general estimate of his work as a poet. His personal life, his growth, his attitude toward his art, and his place in nineteenth century poetry will be considered, but the chief attention will be paid to his analysis of human life and character.

The instruction in this course will be by means of recitations, discussions, and the preparation of short special papers by the students.

[Wednesday and Saturday, 9 to 11 A. M., 1916-17.]

ASSISTANT PROFESSOR LEWIS:—

*19 *The English Renaissance.*

1 hr.

A study of the development of literary art and humanism in England, beginning with the later middle ages and leading up to the Elizabethan period. Specimens of romantic and religious poetry as early as the thirteenth century will be read, for the sake of securing a medieval background. This course would be rather difficult for students who have not read Chaucer.

DR. REED.

*50 *English Lyrical Poetry.*

2 hrs.

A course on the origin and development of the English lyric from Skelton to the present day. The technique of lyrical verse will be examined, and attention will be paid to the development of lyric types such as the ode, and the sonnet. Among the many authors to be read are Wyatt, Sidney, Spenser, Shakespeare, Campion, Donne, Jonson, Carew, Lovelace, Suckling, Crashaw, Marvell, Herrick, Prior, Gay, Burns, and Blake.

[Tuesday and Thursday, 3 P. M. (second term, 3 P. M.)]

DR. CHASE.

*51 *History of the English Language.*

2 hrs.

A course on the basis of Emerson's *History of the English Language*, with special reference to etymology. Nesfield's

Historical English and Derivation will be used as a text-book in the latter subject. The work will consist of recitations and the preparation of brief written reports upon topics suggested by the study. Only those who have already taken Course 42, or its equivalent, will be admitted to this course.

[Tuesday and Friday, 9.30 A. M.]

THE MODERN LANGUAGE CLUB, formed of instructors and students in the departments of English, Romance Languages, and German, holds its regular meetings on the second Saturday evening of each month for the reading and discussion of original papers, and for reports of progress in the field of these studies.

THE ENGLISH CLUB, to which are invited all persons, whether members of the University or not, who are interested in the study or teaching of the English language or literature, meets on alternate Monday evenings to listen to the presentation of some topic, and engage in the informal discussion of it. The club never remains in session over an hour, and thus opportunity is afforded for keeping other engagements the same evening.

THE ENGLISH SEMINARY ROOM, at 135 Elm st., which has lately been enlarged for the better accommodation of graduate students in English, contains the nucleus of a working library. This room is general headquarters for the graduate students in English, and serves for the meetings of the English Club, and for similar purposes.

VI. NATURAL AND PHYSICAL SCIENCE

WILLIAM H. BREWER, Ph.D.	OTHEL C. MARSH, Ph.D., LL.D.
ARTHUR W. WRIGHT, Ph.D.	SIDNEY I. SMITH, M.A.
ADDISON E. VERRILL, M.A.	HENRY S. WILLIAMS, Ph.D.
WILLIAM G. MIXTER, M.A.	CHARLES S. HASTINGS, Ph.D.
EDWARD S. DANA, Ph.D.	RUSSELL H. CHITTENDEN, Ph.D.
FRANK A. GOOCH, Ph.D.	HORACE L. WELLS, M.A.
SAMUEL L. PENFIELD, M.A.	LOUIS V. PISSON, Ph.B.
CHARLES E. BEECHER, Ph.D.	ALEXANDER W. EVANS, M.D.
WILLIAM J. COMSTOCK, Ph.B.	PHILIP E. BROWNING, Ph.D.
HENRY L. WHEELER, Ph.D.	LAFAYETTE B. MENDEL, Ph.D.
JAMES LOCKE, Ph.D.	BERTRAM B. BOLTWOOD, Ph.D.
WESLEY R. COE, Ph.D.	GEORGE GRANT MACCURDY, M.A.

MINERALOGY

Professor DANA :—

- 1 *Mineralogy and Crystalligraphy.* 2 hrs.

Practical study of mineral species by means of blowpipe analysis and other methods; also mathematical study of the forms of crystals. Additional opportunity is given to those who desire it to gain facility in the determination of minerals.

This course can be most advantageously prosecuted by those who have some knowledge of chemistry.

[Saturday, 9.30–11.20 A. M.]

Professor PENFIELD :—

- 2 *Determinative Mineralogy.* 3 hrs.

This course consists at first of a few exercises in blowpipe analysis, which are then followed by an application of these methods to the determination of minerals. Students have abundant opportunity to experiment with minerals, and thus become familiar with their chemical and physical properties. A labeled collection of carefully selected specimens for comparison, and unlabeled collections for identification, are at all times accessible. The laboratory is open daily from 9–1 and, Saturdays excepted, from 2.30–5, so that by devoting more than the allotted time to the subject the course may be considerably extended.

[Wednesday, 2.30–5.30 P. M., or Saturday, 9.15 A. M.–12 M.]

3 *Crystallography.* 2 hrs. 1st half of 2d term.

Lectures in which the symmetry relations of the various systems, and the forms of crystals and their physical properties are discussed. Throughout this course collections of natural crystals and wooden and glass models are used for demonstrating varieties of form and development.

[Monday and Tuesday, 3-4 P. M.]

4a *Descriptive Mineralogy.* 3 hrs. 2d half of 2d term.

Lectures on the general subject of mineralogy, in which the classification, physical and chemical properties, occurrences, associations, and uses of minerals are discussed. The course is illustrated by the valuable and extensive Brush Collection.

[Monday and Tuesday, 3-4 P. M., and Saturday, 9.15-10.15 A. M.]

4b *Descriptive Mineralogy (Advanced Course.)*

1 hr. 1st and 2d terms.

This course is open to those who have had courses 3 and 4a. Specimens in the Brush Collection are examined, and special prominence is given to the discussion of the economic and geological relations of minerals.

5 *Experimental Work in Crystallography and Mineralogy.*

Daily.

The reflecting goniometer is used, the mathematical relations of crystal forms are carefully determined and calculated, and the forms are drawn. The optical properties of crystals are studied and determined by means of the polariscope, polarizing microscope, refractometer, total reflectometer, and other appliances.

6 *Original Investigation in Mineralogy and Crystallography.*

Opportunities are offered to those who are far enough advanced, for research work in mineralogy and crystallography. This includes the study of the chemical composition and deduction of the formulae of minerals, together with their physical, optical, and crystallographic properties.

Material for investigation is available from the University and Brush Collections.

GEOLOGY

Professor Williams:—

* *Geology.*

2 hrs.

A course of lectures on the general principles of the science of geology. Historical geology will be studied chiefly from a geological standpoint. The special study of the relation of organisms to geology will be considered in the following course.

[TUESDAY AND FRIDAY 8.30 A. M. to 9 M.]

b *Geological Zoology.*

The study of fossils in the laboratory, and with field-work so far as practicable. 1. as means of determining and classifying geological formations. 2. as evidence of the relations of organisms to their environment and of their evolution in the past.

For this course some knowledge of zoology is desirable; and for those who wish to take the course, and are not sufficiently well prepared in this direction, preliminary work in the zoology of living forms is planned.

Instruction is given also by informal lectures and the assignment of courses of reading of geological literature bearing upon the problems under investigation.

The number of hours and the specific line of study are arranged by the instructor upon consultation in each case.

Professor Pughs:—

10 *Petrology.*

Daily, 9 A. M. to 1 P. M.

1. Study and determination of the rock-making minerals by optical and chemical methods. Includes the use of the petrological microscope.

2. History, origin, and classification of rocks, commencing with igneous types and passing into the crystalline schists, during which metasomatic and dynamic changes, including effects of dynamo-metamorphism, are taken up. The work is carried on mostly in the laboratory, with access to collections both of rocks and thin sections.

3. Original investigation. In sequence to 1. and 2. some special object or locality may be made the subject of investigation. The work requires laboratory methods of determination, both chemical and microscopical, with consultation of the literature and occasionally work in the field. A large amount of material is available in the petrologic collections of the Sheffield Scientific School.

Only those whose previous training in mineralogy and geology has been sufficient to enable them to pursue the subject advantageously are admitted to this course.

11 *Elementary Petrology.* 1 hr. first half 2d term.

A series of lectures of an elementary nature, and without the use of the microscope, on the history, origin, and classification of rocks with especial reference to their geologic relations and economic properties. Illustrated by collections.

[Wednesday, 4 P. M.]

*12 *Elementary Structural and Dynamical Geology.*

3 hrs. first half-year.

The exercises are partly recitations and partly lectures, and are illustrated by maps, diagrams, and specimens. Leconte's *Elements of Geology* is used as a text-book.

[Monday, Wednesday, and Friday, 8 A. M.]

Mr. GREGORY :—

*13 *Physical Geography.* 3 hrs. first half-year.

A course of lectures on the elements of Physiography. The time will be largely occupied with a study of the land—mountains, rivers, plateaus, etc.; but the atmosphere and the ocean will also receive attention. Two points will be kept in view; first, the history and development of land forms into their present condition as natural scenery, and second, the effect of territorial features and climate upon the human race.

Assigned readings and occasional excursions may be required.

[Tuesday, Wednesday, and Thursday, 5.00 P. M., 37 North Sheffield Hall.]

For a course in Physical Geography in its relation to history, see Political and Social Science, course 29.

PALAEONTOLOGY

Professor MARSH :—

- 14 *Vertebrate Palaeontology.* 2 hrs. 2d term.

Lectures and laboratory instruction. Open to advanced students who are familiar with Zoology and Geology. Courses of study will be arranged by the instructor upon consultation.

Professor BEECHER :—

- 15 *General Invertebrate Palaeontology.* 2 hrs. 1st term.

An elementary course, including the careful study in the laboratory of characteristic genera representing the principal orders of fossil invertebrates.

- 16 *Invertebrate Palaeontology (Faunal).*

The study of extinct faunas by means of collections of fossils from typical localities.

- 17 *Invertebrate Palaeontology (Special).*

Systematic study of the structure, development, and affinities of one or more classes of fossil animals. In the laboratory work, attention is given to modern methods of preparation and preservation of specimens.

- 18 *Original Investigation in Invertebrate Palaeontology.*

Following 15, 16, 17, opportunity is given to take up some special subject for investigation and the discovery of facts new to science.

The requisite material is available in the extensive collections of the Peabody Museum.

The work in these courses (15-18) necessitates the frequent consultation of memoirs and scientific reports, occasional field-work, the use of the microscope, the preparation of thin sections, and other methods employed in thorough investigations.

- 19 *Organic Evolution.* 1st half year.

Practical illustration of the methods used in modern researches.

- 20 *Taxogeny.* First half 2d term.

The principles governing the classification of organisms.

Courses 15-20 are open to those who have had some previous knowledge of geology and zoology. Course 15: laboratory work 4 hours per week. Courses 16, 17: laboratory work three days per week, 2-5 P. M. Courses 19 and 20 will require about two hours lecture and two hours in the laboratory each week. Other hours and divisions of work may be arranged to suit the convenience of students.

PREHISTORIC ARCHAEOLOGY

Mr. MACCURDY :—

21 *Prehistoric Anthropology.*

Courses of study will be arranged by the instructor upon consultation.

PHYSICS

Professor A. W. WRIGHT :—

22 *Physics.* 4 hrs. to count as 2 hrs.

Chiefly practical work in the Sloane Physical Laboratory, with measurements, especially in heat, light, electricity, and magnetism, each exercise occupying two hours. As introductory to the laboratory practice, the exercises during a portion of the first term consist of recitations or discussions upon the theory and methods of physical measurements, the use of instruments, and other special topics. Laboratory facilities are also freely accorded to students of the course at other times than those of the stated exercises.

23 *Physics (Advanced Course).* 4 hrs. to count as 2 hrs.

Practical work in the Sloane Physical Laboratory, with instruction in the principles and methods of physical investigation, the processes and instruments of measurement, and the methods of computing and reducing results of observations. Special attention is paid to practical measurements in optics, electricity, and magnetism. The student is expected to make original investigations an important part of his work, and has the free use of the laboratory facilities for carrying them on.

For those who have already pursued course 23 or its equivalent.

Professor HASTINGS :—

18 *Physics.* 3 hrs. lectures, 6 hrs. laboratory work.

Laboratory work, supplemented by lectures on the theory of observation with the method of least squares, and on the theory of electricity and electrical instruments. The use of the laboratory is at the command of the student at all times.

[Lectures on Wednesday, Friday, and Saturday, 12 M.]

For courses in Mathematical Physics, see Pure and Applied Mathematics, courses 3, 5, 7, and 8.

THE PHYSICS JOURNAL CLUB, open to graduate students in Physics, meets weekly for the review and discussion of the current literature in this department of study.

CHEMISTRY

(COURSES IN THE SHEFFIELD CHEMICAL LABORATORY)

The analytical laboratories of the Sheffield Scientific School are open to students in term time from 9 to 1 and from 2 to 5 o'clock, every week-day except Saturday. The greater part of the instruction is given in the laboratory to each student separately, but the various classes have, in addition, two or more lectures or recitations a week, in connection with the studies pursued in the laboratory.

Professor MIXTER :—

24 *Chemical Physics.*

Especially the methods employed in the determination of molecular masses and specific heat.

Professor WELLS :—

25 *Qualitative Analysis.*

1st term.

Embraces a study of the commonly occurring elements in their qualitative relations, and includes a systematic course of analysis for the same. A good knowledge of elementary chemistry is a necessary preparation for this. If desired the course is extended to include a study of many of the rare elements.

[Laboratory hours: Monday to Friday, 9 A. M. to 1 P. M., and 2 to 5 P. M. Lectures and Recitations: Monday and Tuesday, 5 P. M.,—occasionally at 12 M.]

26 *Quantitative Analysis.*

This is open only to those who have taken course 25 or its equivalent.

(a) *Gravimetric Analysis.* Second term. Embraces a series of exercises involving a considerable number of important methods.

(b) *Volumetric Analysis.* First term. This follows the gravimetric analysis. It includes the most important and typical methods.

(c) *Ultimate Organic Analysis.* First term.

Inorganic Preparations. 1st half of 2d term.

A course of laboratory work, with lectures or recitations. About twenty or thirty compounds are prepared, which give a variety of important and instructive processes.

27 *Advanced Quantitative Analysis.*

(a) *Metallurgical Chemistry.* The analysis of ores, fuels, fluxes, alloys, metals, and other furnace products.

(b) *Mineralogical Chemistry.* The analysis of minerals for scientific purposes.

Laboratory hours, every week-day (except Saturday) 9 A. M. to 1 P. M., and 2 to 5 P. M.

28 *Metallurgy and Assaying.* 2d half of 2d term.

A course of lectures on elementary metallurgy, followed by a short course of demonstrative lectures on gold and silver assaying, with the practical application of assaying to a few typical ores.

29 *Technical Gas-Analysis.* 2d half of 2d term.

A short practical course, including the principal methods.

30 *Investigations in Inorganic Chemistry.*

Opportunities are offered, to those who have had sufficient preparation, to make researches upon analytical methods, the preparation of chemical compounds, and other scientific problems.

Mr. COMSTOCK :—

31a *Elementary Organic Chemistry.* Both terms.

During the first four weeks of the second term the afternoon exercises are omitted and daily laboratory work substituted, 9 A. M. to 1 P. M., with occasional lectures at 12 M.

[Recitations supplemented by lectures, Thursday and Friday, 5 P. M.]

- 31b *Organic Chemistry.* 2 hrs. 1st term.
A continuation of the above course. Recitations and lectures.
[Thursday and Friday, P. M.]

Dr. LOCKE :—

- 32a *The Systematization of Inorganic Compounds.* 1st term.
[Lectures, Monday and Friday, 4 P. M.]

- *32b *Advanced Inorganic Chemistry.* 3 hrs. 1st term.

- 33 *The Application of the Ionic Theory to Analytical Chemistry.* 2 hrs. 1st half 2d term.
Ostwald's *Foundations of Analytical Chemistry* will be followed.
[Lectures, Monday and Friday, 4 P. M.]

- 34 *The Constitution of Chemical Compounds.* 2 hrs. 2d half 2d term.
Methods of determination illustrated on typical compounds ; stereochemistry ; double compounds, etc.
[Monday and Friday, 4 P. M.]

Dr. H. L. WHEELER :—

- 35 *Advanced Organic Chemistry.*
This offers an opportunity for more extended study and original investigation to those who have proper preparation.
- 36 *Organic Preparations.* 1st half of 2d term.
Laboratory-work, consisting of five exercises per week of about three hours each in the preparation of such compounds as will give familiarity with the most important synthetical methods.

Dr. BOLTWOOD :—

- 37 *Physical Chemistry.* 1st half of 2d term.
A course of about twelve lectures on the theory of Physical Chemistry.
[Monday, 5 P. M.]
- 38 *Physico-Chemical Measurements.* 2d term.
Laboratory practice in the more important methods of Physical Chemistry.
[Monday to Friday, inclusive, 9.30 A. M. to 1 P. M.]

- 39 *Electro-Chemistry.* 1st half of 2d term.
A course of twelve lectures on the theory of Electro-Chemistry.
[Friday, 5 P. M.]

- 40 *Electro-Chemistry.* 2d term.
Experimental work in Electro-Chemistry, including the usual measurements, quantitative electro-analysis, and the synthesis of organic and inorganic compounds.
[Monday to Friday, inclusive, 9.30 A. M. to 1 P. M.]

(COURSES IN THE KENT LABORATORY)

The Kent Laboratory is open daily from 9 A. M. to 1 P. M., and from 2 to 5 P. M., to students who take strictly graduate courses.

Professor GOOCH, Assistant Professor BROWNING, and
Dr. PHELPS :—

- *41 *Experimental Inorganic Chemistry.* 3 exercises—6 hrs.
Practical laboratory work, lectures, and written exercises. An introduction to elementary chemical theory, the use of symbols and equations, and the descriptive study of the elements and their compounds. While elementary and fundamental in character, this course is probably sufficient for the needs of those who desire merely a very general knowledge of the facts and methods of chemistry.

[Monday and Friday, 2 P. M., or Tuesday and Thursday, 7 P. M., or Tuesday and Thursday, 9.30 A. M., and Wednesday, 3 P. M.]

Assistant Professor BROWNING :—

- *42 *Qualitative Chemical Analysis.* 3 exercises—5 hrs.
Laboratory practice in the ordinary processes of qualitative analysis, with lectures. This course is of special importance to those who intend to study medicine, engineering, or the technical professions in general, or who desire to teach elementary science.

[Monday and Thursday, 9.30–11.20, Wednesday, 10.30.]

Professor GOOCH and Dr. PHELPS :—

- *43 *Elementary Organic Chemistry.* 2 exercises—4 hrs.

An introduction to the study of the compounds of carbon.
Laboratory work with lectures.

[Tuesday, 10.30 A. M., and Friday, 9.30 A. M.—12.20 P. M.]

Dr. PHELPS :—

- 44 *Organic Synthesis.*

Laboratory practice in synthetical processes too long or too complicated to be included in the experimental work of course 40.

[Daily ; hours for consultation fixed by appointment.]

Professor GOOCH :—

- *45 *Quantitative Analysis.* 2 exercises—6 hrs.

Laboratory practice in the use of the simpler methods of gravimetric and volumetric quantitative analysis. This course is intended chiefly for those who wish to study exact methods of manipulation and treatment with a view to the application of analysis to scientific or practical ends.

[Tuesday and Thursday, 2.00—4.50 P. M.]

- 46 *Quantitative Chemical Analysis (second course).*

Practice in the more complex processes of gravimetric, volumetric, and electrolytic analysis.

[Daily ; hours for consultation fixed by appointment.]

- 47 *Chemical Theory.* 1 hr.

This course (given in alternate years) is devoted to the discussion of the general principles and modern theories of chemistry.

- 48 *Special Methods.*

Laboratory practice in special methods of analysis and research.

[Daily ; hours for consultation fixed by appointment.]

- 49 *Original Work and Research in Inorganic Chemistry.*

(a) Special problems of *analysis*—either experimental criticism of known processes or constructive work looking towards the development of new methods.

(b) The critical examination of reactions.

[Daily ; hours for consultation fixed by appointment.]

Assistant Professor BROWNING :—

50 *The Rare Elements.* 1 hr. both terms.

A short course of lectures covering the discovery, occurrence, and principal reactions of the elements not included in the general course. The methods in use for the qualitative and quantitative determinations are carefully studied, and a systematic arrangement developed so far as practicable. Those who wish to do so may take laboratory work in connection with these lectures.

[Friday, 8.30 A. M.]

51 *Inorganic Preparations.* 1 hr. both terms.

A short course, mainly laboratory work, covering typical methods for the preparation of inorganic salts. Thorp's *Inorganic Preparations* will serve as guide.

THE CHEMICAL CLUB, composed of instructors, graduate students, and others interested in chemistry, holds fortnightly meetings for the presentation and discussion of papers and reviews of recent work.

BIOLOGY

Professor VERRILL :—

52 *Zoology.*

Laboratory practice, recitations, readings, and lectures. The laboratory work is varied according to circumstances, in order to accommodate, as far as possible, those students who wish to pursue special branches. Most of the time is devoted to comparative anatomy, morphology, and systematic zoology. Ample collections in the Peabody Museum, representing all classes of animals, are available for instruction, while the proximity to the sea makes it easy to provide fresh or living examples of most classes of marine animals for study and dissection.

Professor S. I. SMITH and Dr. COE :—

*53 *Elementary Anatomy and Histology.* 4 hrs. 1st term.

*54 *Comparative Anatomy and General Biology.* 6 hrs. 2d term.

55 *Comparative Anatomy and General Biology.*

Graduate students who have had sufficient elementary training are received in the Sheffield Biological Laboratory, and are provided with special advanced courses of instruction adapted as far as possible to the particular wants of the individual student. Such courses may cover either or both terms, and require at least three hours of laboratory work per day for two or more days each week. To such students the laboratory is open five days a week.

Professor CHITTENDEN and Assistant Professor MENDEL:—

56 *Physiological Chemistry.*

Graduate students who have sufficient knowledge of analytical and organic chemistry and elementary physiology are received in the Sheffield Biological Laboratory at the beginning of the academic year, where they can pursue a course in physiological chemistry extending throughout the entire year. The course necessitates, on an average, four hours of laboratory work each day, and attendance at lectures and recitations three or four times each week. Opportunities are afforded also for the carrying on of original investigations, and to students qualified for such work the laboratory is open during the entire day.

Students who are desirous of studying any special subject in physiological chemistry and have but a limited amount of time are received also, provided they are qualified by previous work to pursue the study advantageously.

[Monday to Friday, inclusive, 9 A. M. to 1 P. M.]

57 *Experimental Physiology.* 3 hrs.

Essentially a laboratory course intended to afford experimental acquaintance with certain departments of physiology, and giving particular reference to general physiological methods. The physiology of muscle and nerve, of the circulation, secretion, etc., is considered in some detail. Other departments are treated in a more elementary manner; a brief survey of the entire field is thus afforded, while certain topics are studied with sufficient thoroughness to give training in technique and appreciation of the aims and methods of research. Opportunity is also afforded for more advanced work in certain lines of experimental physiology.

[Saturday, 9 A. M. to 1 P. M.]

58 *Physiological Seminary.* 2 hrs. both terms.

A study of the recent advances in physiology and physiological chemistry is undertaken. Informal talks are given on the bearing which recent discoveries in physiology have on existing views, and the students are required to prepare reports and reviews of work appearing in the current German, French, and English physiological literature.

[Wednesday, 4 to 6 P. M.]

Professor CHITTENDEN :—

59 *Experimental Toxicology.* 2d half 2d term.

A course of about twenty lectures, with demonstrations on the physiological action of the more important mineral and alkaloidal poisons. This course can be supplemented, if desired, by laboratory work on the chemical reactions of poisons, with a study of the methods of detecting and separating poisons.

[Tuesday, Thursday, and Saturday, 8.10 A. M.]

*60 *Physiology.* 1 hr.

Huxley's *Lessons in Elementary Physiology*, with occasional lectures and illustrative experiments.

[Wednesday, 2 P. M.]

*61 *Physiological Chemistry.* 4 hrs. 2d term.

Four exercises a week, of a minimum of two hours each, in the laboratory of physiological chemistry. The time is devoted mainly to a study of the chemistry of the connective, contractile, and nervous tissues, of the chemical processes of salivary, gastric, and pancreatic digestions, and so far as the time allows, of other subjects connected with the physiology of nutrition and the chemistry of the excretions.

A laboratory fee is charged for this course. The student in addition must bear the expense of gas, flasks, etc., which should not exceed ten dollars.

*62 *Physiology of Nutrition.* 3 hrs. 1st half 2d term.

[Tuesday, Thursday, and Saturday, 8.10 A. M.]

Dr. EVANS :—

*63 *Botany.* 3 hrs. 2d half-year.

An elementary course in the botany of flowering plants. Laboratory work and recitations. The plant and its various organs

are studied with respect to their form, structure, and functions, and special emphasis is laid on the relationships of a plant to its environment.

64 *General Morphology of Plants.* 2 hrs.

Laboratory work and informal lectures. Beginning with the simplest forms, the various groups of plants are taken up in suitable types, and their structure, development, and mode of life, are studied and compared.

The course is limited to those who show a satisfactory knowledge of the botany of flowering plants.

[Wednesday and Friday, 3 P. M.]

Dr. COE :—

65 *Cytology and General Embryology.* 4 hrs. 1st term.

Laboratory work supplemented by lectures, on the animal cell in the principal phases of its activity, with special reference to maturation, fertilization, and cleavage of the ovum. The course requires two forenoons a week and will include the practical study of cell with resting nucleus, cell-division, spermary and spermatozoa, ovary and maturation of the ovum, fertilization, cleavage, and formation of primary layers of the embryo. Considerable attention is given to the technique of the subject.

In addition to the above, special courses may be arranged for the second term to meet the requirements of individual students, and such courses may include a study of the later stages of the development of the embryo.

VII. MATHEMATICS

JOHN E. CLARK, M.A.	J. WILLARD GIBBS, Ph.D., LL.D.
CHARLES B. RICHARDS, M.A.	EUGENE L. RICHARDS, M.A.
A. JAY DUBOIS, Ph.D.	WILLIAM BEEBE, B.A.
ANDREW W. PHILLIPS, Ph.D.	SAMUEL E. BARNEY, C.E.
JAMES PIERPONT, Ph.D.	PERCY F. SMITH, Ph.D.
JACOB WESTLUND, Ph.D.	GEORGE P. STARKWEATHER, Ph.D.
WENDELL M. STRONG, Ph.D.	HERBERT E. HAWKES, B.A.

PURE MATHEMATICS

Professor CLARK :—

1a *Determinants and Theory of Equations.* 2 hrs. 1st term.
[Wednesday and Saturday, 10.30 A. M.]

1b *Differential Equations.* 2 hrs. 2d term.

The short courses in the above subjects are designed especially for the graduate students in the departments of engineering in the Sheffield Scientific School, whose time is mainly occupied with work in those departments.

[Wednesday and Saturday, 10.30 A. M.]

Professor GIBBS :—

2a *Vector Analysis.* 3 hrs. 1st term.

Elementary course, in which the simpler problems of geometry, kinematics, and mechanics are treated by vector methods. The matter taught is not entirely unlike that usually given in courses in quaternions, but the method followed is in some respects nearer to Grassmann's than to Hamilton's.

[Monday, Thursday and Friday, 3 P. M.]

2b *Vector Analysis.* 3 hrs. 2d term.

Advanced course, including differentiation with respect to position in space, the theory of the potential and allied functions, and that of linear vector functions. Applications are made to hydrodynamics, to the motion of a rigid body, and to the theory of curvature. This course is especially designed as an introduction to the study of mathematical physics, and is open only to those who have taken the preceding.

3 *Electricity and Magnetism.* 1 hr.

In this course, which is based on Maxwell's theory, the student is taught the use of vector methods in this branch of physics.

4. *Thermodynamics and Properties of Matter.* 2 hrs.

This course is a development of the consequences of the two fundamental laws of thermodynamics, as affording a general theory of physical and chemical equilibrium, and as giving shape to the investigation of the sensitive properties of matter.

In the year 1900-1901, in addition to the courses 22 and 23 in vector analysis, the following may be expected

5. *Multiple Algebra.* 1 hr.

The object of this course is to give some idea of the methods and results of the principal neo-arithmetic algebras, especially of the *Algebrae quaterniones* and the algebra of matrices. It is intended for such students as have already some familiarity with the algebra of vectors, derived from the preceding courses or from the study of quaternions.

[Omitted 1899-1900.]

6. *Electro-Magnetic Theory of Light.* 2 hrs.

This course commences with the general theory of harmonic motion and its representation by complex scalar and vector quantities. The laws of electrodynamics are then applied to the phenomena of the propagation of light in isotropic and anisotropic media, and its reflection at a surface between two such media, including the case of an absorbent medium, and the dispersion of colors.

[Omitted 1899-1900.]

Professor BEEBE :—

9. *Computation of Orbits.* 2 hrs.

Development of formulæ and numerical calculations for determining the parabolic orbit of a comet from three observations.

Computation of an ephemeris and reduction of observations for comparison with the ephemeris.

The course may be carried on through a second year to computation of elliptic orbits and the discussion of perturbations.

[Friday and Saturday, 10 A. M.]

Professor PIERPONT :—

10 *Differential Equations.* 3 hrs.

Treats for the most part the technique of differential equations without making use of the theory of functions and Lie's theory of transformation groups. It is therefore especially adapted to students of mathematical physics and of other branches of applied mathematics. It is intended to pass in review the equations in one and more independent variables of most frequent occurrence. Particular attention will be paid to the potential equation $\Delta u = 0$ and to the equation defining the functions of Legendre, Laplace and Bessel.

Books of Reference: A. R. Forsyth, *Differential Equations*, London; Byerly, *Fourier's Series and Spherical Harmonics*; H. Laurent, *Traité d'Analyse*, vols. v and vi; Demartres, *Cours d'Analyse*.

11 *Elliptic Functions.* 2 hrs.

Both the functions of Jacobi and Weierstrass will be treated, and their relation to each other will be brought out. Especial attention will be given to important and interesting application to geometry and mathematical physics.

12 *Algebraic Numbers and Functions.* 2 hrs.

The work of Kronecker, Dedekind, Weber, Hilbert Hurwitz, Munkowski, and others will be taken up. Application will be made, among other things, to complex multiplication of the elliptic functions.

Assistant Professor PERCY F. SMITH :—

13 *Theory of Transformations of Space.* 2 hrs.

The object of this course is not so much to give an exhaustive treatment of the subject as to induct the student, by easy stages and by means of pregnant examples increasing in complexity, into the domain of contact transformations in general. The concept, "group of transformations," will be kept in the foreground, and numerous cases of both finite and infinite continuous and discontinuous groups will be considered. Point-point transformations as well as those transformations of space by which a change of the space element is effected, e. g., the point-line transformation of Lie, will be taken up. In short, the work of the year is the geometric interpretation of equations in two sets of variables.

14 *Algebraic Curves and Surfaces.*

2 hrs.

This course forms a sequel to the usual undergraduate courses in Analytical Geometry. The general theory will first be developed and then illustrated by detailed study of curves and surfaces of the third and fourth orders. The large collection of models of these configurations in the possession of the University will be drawn upon for this. In this connection, a study will be made of the researches of Newton, Möbius, Plücker, Kummer, Klein, Zeuthen, Rohn, Hilbert and others, on the real shape of algebraic curves and surfaces. And in conclusion, the recent investigations on the classification of surfaces of higher orders will occupy the attention.

Dr. WESTLUND:—

15 *Calculus.*

3 hrs.

Topics are: differentiation of composed and implicit function; change of variables; infinite series and products for real and complex variables; the differential geometry of plane and twisted curves and of surfaces; multiple integrals, differentiation and integration under the sign of integration; the Eulerian integrals; integrals when the variable is complex.

Reference works. Byerly's *Differential and Integral Calculus*, 2 vols.; Koppets *Differential and Integralrechnung*; Appell's *Cours d'Analyse Mathématique*.

Dr. STRONG and Mr. HAWKES.

16 *Higher Algebra and Analytic Geometry.*

3 hrs.

In the first part of the course topics are, substitutions, symmetric functions, roots of unity, determinants, solution of linear systems of equations, elimination, resultants, discriminants, and invariants.

The second part of the course will be devoted to analytic geometry, laying stress on modern methods. As many as possible of the usual topics will be taken up in plane geometry; in solid geometry quadratic surfaces will be treated in some detail. Determinants and invariants will be freely applied.

Books of reference—Algebra, Burnside and Panton, *Theory of Equations*; Elliott, *Algebra of Quaternions*; Carnoy, *Algebra Supérieure*.

Geometry, C. Smith, *Solid Geometry*; Clebsch-Lindemann, *Lehrbuch in Geometrie*.

Dr. STARKWEATHER :—

17 *Mechanics.*

2 hrs.

The course consists of lectures and seminary work, a good knowledge of the Calculus and a previous course in elementary mechanics, especially the problems thereof, being assumed. Special attention is given to the kinematics of a rigid body and of plane kinematic chains with one degree of freedom. In dynamics the fundamental conceptions of force and mass receive particular consideration, and special effort is made to give the student a clear sense of the importance and applicability of the principles of work and energy, momentum, and moment of momentum, which are considered successively for the material particle, the rigid body and a system of bodies.

READING CLUB IN FRENCH AND GERMAN MATHEMATICS.

The club is in charge of instructors in turn, and will hold its meetings once or twice weekly at hours to be arranged later.

Various specimens of mathematical French and German will be read. Object is to give students an opportunity to become familiar with mathematical technical terms and to acquire an ability to read mathematical literature rapidly at sight.

This does not count as a course. Attendance is voluntary but warmly recommended to all.

APPLIED MATHEMATICS

Professor C. B. RICHARDS :—

MECHANICAL ENGINEERING.

This course, arranged for candidates for the degree of Mechanical Engineer, is open also to special graduate students, who are allowed in certain cases to [take selected parts. The leading topics are :

18 *Applied Mechanics.*

Including graphical methods in applied kinematics, and in the investigation of mechanisms working with friction ; graphical determinations of the accelerations of the moving parts of machines ; the strength of materials as affecting the proportions of machine elements ; the applications of the principles of hydraulics to the construction and working of turbines and pumps.

19 *Thermodynamics.*

Applications to the compound steam-engine, air compressors and compressed air motors, engines worked by volatile vapors, refrigerating machines, the warming and ventilation of buildings.

20 *Machine-Design.*

In this course the student is engaged in practical exercises under the guidance of the professor in charge, investigating machinery, the designing and making of working-drawings, specifications, and estimates for machines and manufacturing plant. In addition to the study of machines in general, one of the following subjects (at the option of the student) receives particular attention: (a) Marine engineering; (b) Railway machinery; (c) Pumping machinery and plant; (d) Machinery and plant for manufacturing. The student is required to make complete drawings, from new designs, of at least one important piece of machinery under one of these subjects. A compound marine engine and boilers, a locomotive, a turbine driving centrifugal pumps, a blowing-engine for an iron furnace, are examples.

Candidates for the degree of Mechanical Engineer are required to take also a course in mathematics, to sustain a final examination, and to present a satisfactory thesis on a subject approved by the professor in charge of the course.

Professor DuBois :—

CIVIL ENGINEERING.

This course offers instruction for advanced graduate students as well as for those students who may be regular candidates for the degree of Civil Engineer. It embraces the following topics:

21 *Mechanics applied to Engineering.* 3 hrs.

Including the application of kinematics, statics, and kinetics to engineering problems.

[Thursday, Friday, and Saturday, 12 M.]

22 *Construction and Design.* 3 hrs.

Including the strength and properties of materials, construction and design of bridges, roofs, foundations, retaining walls, dams

and embankments, masonry arches, sewerage and drainage, improvement of rivers and harbors, specifications and contracts, and the preparation of designs and working-drawings.

Candidates for the degree of Civil Engineer are required to take, in addition, a selected course in mathematics and practical astronomy, and when the facilities in the physical laboratory permit, a course of laboratory work under the superintendence of the professors in charge. They are also required to sustain a final examination, and each to present a satisfactory thesis, accompanied by appropriate designs, upon a subject approved by the professor in charge of the course.

To special students, not candidates for the degree of Civil Engineer, a selection of special topics is allowed.

[Monday, Tuesday, 2.30 P. M., and Wednesday, 12 M.]

Professor BEEBE:—

*23 *Descriptive Astronomy.* 3 hrs. 1st half year.

Intended principally for the study of topics connected with the historical and physical side of astronomy. Only so much mathematical work is introduced as is essential to an understanding of such topics. Text-book: Young's *Elements of Astronomy*.

Opportunity will be given for study of constellations and observation with the telescope.

[Monday, Wednesday, Thursday, 10.30 A. M., A. O.]

*24 *Surveying.* 3 hrs. 2d half year.

One or sometimes two hours each week are given to recitations. The other exercises are in field- or office-work during the afternoons, each exercise occupying not less than two hours.

Field-work: The ordinary operations of land-surveying, leveling, and elementary topography, involving the use of the chain, compass, surveyor's level, transit and plane table.

Office-Work: Plotting surveys from the field notes; determination of areas from the map and by numerical calculation; map-drawing, plane and topographical; examination of instrumental errors.

Text-book: Johnson's *Surveying*.

[Wednesday, 10.30 A. M., Tuesday and Thursday, 2 P. M.]

25 *Practical Astronomy.

2 hrs.

This course consists of observational work with astronomical transit and chronograph for determination of sidereal and standard time, and with sextant and theodolite for determination of latitude and azimuth, numerical computations for reduction of observations, derivation of formulae, and corrections from *Loomis's Practical Astronomy*.

Tuesday and Friday, 10 to 11 A. M.

ASSISTANT PROFESSOR BARNEY:—

26 *Geology and Practical Astronomy.*

2d term.

Methods of observation, based on measurements, triangulation, field-work; theory of least squares, adjustment of observations, and computation of geodetic latitudes, longitudes, and azimuth. The study of practical astronomy embraces the use of the sextant and engineer's transit with solar attachment for determining time, latitude, azimuth, and needle variation.

27 *Railway Surveying.*

Three weeks in September.

A preliminary line for a railroad is run out, and from the contour map so obtained a final line is located, staked out, and cross-sectioned, and estimates are made for construction. The field-work begins the first Monday in September and occupies the entire time for three weeks.

28 *Design and Construction of Sewers and Sewage Disposal.*

1st term.

Design of system for some town, including all estimates, maps, and detail drawings necessary for the construction of the system and disposal of the resulting sewage.

THE MATHEMATICAL CLUB holds fortnightly meetings, at which are presented sketches of the history of mathematical development and inventions, summaries of articles in current periodicals and other publications on pure and applied mathematics, descriptions and models of new apparatus, together with the original investigations of the instructors and advanced students in this department of study.

A MATHEMATICAL SEMINARY ROOM has been fitted up at 90 High street, and is provided with the nucleus of a Departmental Library for the use of the advanced students in Mathematics.

THE ENGINEERS' CLUB meets monthly in North Sheffield Hall for the reading and discussion of papers on subjects relating to the different branches of engineering.

Lectures are occasionally given before the club by professional experts.

VIII. THE FINE ARTS

JOHN F. WEIR, N.A., M.A.
JOHN H. NIEMEYER, M.A.

JAMES M. HOPPIN, D.D.

Professor WEIR :—

1 *Technical Course in Painting.* 2 hrs.

This course consists of two exercises a week of two hours each. The course consists principally of studies in water-color painting, and includes lectures on the grammar of art, on painting, sculpture, and architecture, technically considered, with a critical account of the various schools and their representative masters. The lectures are fully illustrated by the use of the hydro-oxygen lantern.

[Monday and Friday, 2 to 4 P. M.]

2 *Course in Modeling.* 2 hrs.

Two exercises a week of two hours each. The course consists in modeling from the antique and from the living figure, and is supplemented by the lectures given in course 1.

Professor HOPPIN :—

3 *Saracenic Architecture and the Spanish School of Painting.* 1 hr. 2d term.

A course of lectures.

[Tuesday, 4 P. M.]

Professor NIEMEYER :—

4 *Course in Drawing.* 2 hrs.

This course consists of two exercises a week of two hours each in drawing from the antique and from life, and also in sketching from nature out of doors. Exercises in original composition are required from time to time. It is the aim of this course to teach the fundamental principles of art, and to make the student familiar with the use of pen and pencil.

The work in drawing is supplemented by lectures in Linear Perspective and the analysis of the muscular movements of the human body as expressed in the external forms.

[Tuesday and Thursday, 2 to 4 P. M.]



IX. MUSIC

HORATIO W. PARKER, M.A.

SAMUEL S. SANFORD, M.A.

Professor PARKER :—

***₁ *Harmony.* 2 hrs.**

The study of chords, their construction, relations, and progressions.

This course covers the following subjects :

Intervals,—the measurement of distance from one tone to another ; triads of the major and minor scales, and their inversions ; seventh chords, primary and secondary, with their inversions and resolutions ; modulations ; chromatically altered notes ; suspensions ; organ point ; passing and changing notes ; harmonization of a given melody ; harmony in two, three, and five parts ; simple instrumental accompaniments.

The work is principally the writing of exercises from figured basses. The exercises will be corrected in the class-room with explanations and illustrations.

Jadassohn's *Harmony* (New York and Leipsic) is used as text-book.

***₂ *Counterpoint.* 2 hrs.**

A thorough knowledge of Harmony is required of students in this course.

The work is the harmonizing and supplying melodious additional voices to choral and other melodies used as *Canti Firmi*.

The different orders of Counterpoint in two, three, and four voices ; also double counterpoint, and more or less free imitative writing.

Students in this course are encouraged to try the simpler forms of free composition. No text-book is used.

[Tuesday and Thursday, 3 P. M., 3 Tr.]

***₃ *Strict Composition.* 2 hrs.**

The more severe kinds of composition form the basis of work in this course.

Harmony in Five and more parts ; Threefold and Fourfold Counterpoint ; Four- and Three-part Fugues for voices or for instruments ; Canons of various kinds, with or without accompaniment.

[Tuesday and Thursday, 2 P. M., 3 Tr.]

4 *The History of Music.*

1 hr.

Lectures on the development of music from its earliest stages. Practical illustrations of the lectures on musical form are given in the class-room.

[Wednesday, 5 P. M.]

*5 *Instrumentation.*

2 hrs.

Lectures are given on the nature, compass, tone-color, and other characteristics of all the instruments of the modern orchestra, with written illustrations of their use by great composers.

Exercises in the practical orchestration of short pieces from the works of classic and modern composers, in analyzing, reading and playing from orchestral scores, beginning with Haydn and Mozart Symphonies, and embracing modern works of various kinds.

[Wednesday and Friday, 3 P. M., 3 Tr.]

6 *Free Composition.*

2 hrs.

Several of the smaller forms of free instrumental and vocal music are composed by the students, such as part-songs for male, female, or mixed voices, and pieces of different sorts for the piano and other instruments.

At the close of the year the student is required to produce an extended work, probably in sonata form.

[Wednesday and Friday, 2 P. M.]

Professor SANFORD, Mr. JEPSON, and Mr. TROOSTWYK :—

7 *Practical Music.*

Instruction is given in Piano-, Organ-, and Violin-playing to a limited number of students. Fees range from \$50.00 to \$150.00 for the college year.

Each student of the piano-forte receives individual instruction, under the supervision of Professor Sanford, who will in person instruct a limited number of advanced students in the higher branches of the art, particularly in *ensemble* and concert-playing. (No student is admitted to a course in practical music who has not been admitted to one of the theoretical courses.)

Students of organ-playing receive personal instruction from Mr. Jepson and of violin-playing from Mr. Troostwyk.

X. PHYSICAL EDUCATION

JAY W. SEAVER, M.A., M.D. WILLIAM G. ANDERSON, M.D.

Dr. SEAVER and Dr. ANDERSON :—

280 *Physiology and Gymnastics.* 2 hrs.

This course is designed for those who intend to teach gymnastics or to direct departments of physical education in institutions of learning. The work comes under two general branches as follows :

1 *Physiology.*

This work consists of one recitation or lecture a week with Dr. Seaver, during the year. The first term is devoted to elementary physiology. The second term is devoted to human physiology ; special attention being given to a study of the circulation, respiration, digestion, and excretion. The hygienic importance of these topics is carefully studied. The third term is given to a study of sanitary science. Collateral reading will be required during the third term.

Dr. Seaver may be consulted at the Gymnasium from 9.30 to 10.30 A. M. daily.

[Thursday, 7 P. M., University Gymnasium.]

2 *Principles and Practice of Gymnastics.*

Under this head will be discussed by Dr. Anderson (a) the scientific basis of physical training ; (b) history of gymnastics and growth of the various systems ; (c) means employed, such as apparatus and appliances ; (d) physical examinations and measurements ; (e) pedagogy of gymnastics. Required textbook, Anderson's *Gymnastic Terminology and Methods of Teaching Gymnastics*.

Members of the class will be called upon to arrange exercises for other classes, to classify movements for overcoming common physical defects, and to do practice work in teaching gymnastics.

Dr. Anderson may be consulted at the Gymnasium from 4 to 6 P. M.

[Monday and Thursday, 11.30 A. M., University Gymnasium.]

LIST OF STUDENTS FOR THE ACADEMIC YEAR 1898-99

[Students marked "A." are pursuing courses of study in absence under the direction of the Faculty for the degree of Master of Arts, Mechanical Engineer, or Civil Engineer.]

Elizabeth Frances Abbe, M.A. } Wellesley College 1888	Dorchester, Mass.	37 Howe st.
Ellen Cornelia Abbott, B.A. } Vassar College 1892	West Haven, Conn.	39 Lynwood st.
Harriet Elizabeth Abbott, B.A. } Vassar College 1895	Waterbury, Conn.	Waterbury
Mary Winchester Abbott, B.A. } Vassar College 1894	West Haven, Conn.	West Haven
James Frank Adams, B.A. } Baylor Univ. 1896 and Yale University 1898	Celeste, Tex.	I TR.
James Truslow Adams, B.A. } Brooklyn Polytechnic Inst. 1898	Brooklyn, N. Y.	564 P.
Mary Adèle Allen, B.A. } Smith College 1886	Holyoke, Mass.	83 Grove st.
William Gilbert Anderson, M.D. } Western Reserve Univ. 1883	Cleveland, O.	120 College st.
William Lucius Armstrong, B.A. } Yale University 1889, M.D. Columbia Univ. 1893	New York City	A.
Munson Darwin Atwater, B.A. } Indiana University 1894	Bloomington, Ind.	22 Carmel st.
Martha Austin, B.S. } Smith College 1892, Ph.D. Yale Univ. 1898	Easthampton, Mass.	83 Grove st.
Nathaniel Terry Bacon, Ph.D. } Yale University 1879	Peacedale, R. I.	Peacedale
Thomas Nelson Baker, B.A. } Boston University 1893, M.D. Yale University 1896	Eastville, Va.	35 Foote st.
Ernest Hickok Baldwin, B.A. } Yale University 1891	Cheshire, Conn.	150 Grove st.

Cecil Kittredge Bancroft, B.A. } Yale University 1891	Andover, Mass.	102 N.
Edith Bancroft, B.A. } Wellesley College 1892	Reading, Mass.	90 Whalley av.
Harriet Anna Barber, B.A. } Mt. Holyoke College 1894	Seymour, Conn.	56 Whalley av.
Amos Foote Barnes, PH.B. } Yale University 1897	New Haven, Conn.	452 Orange st.
Alpha Winifred Barlow, B.S. } Smith College 1896	New Haven, Conn.	89 Bristol st.
Joseph Barrell, M.S. } Lehigh University 1897	New Providence, N. J.	373 Crown st.
Arthur Henry Bartlett, B.A. } Yale University 1898	Plainville, Conn.	7 College st.
Samuel Eliot Bassett, B.A. } Yale University 1898	New Haven, Conn.	41 Lynwood st.
Laura Jennie Beach, B.A. } Vassar College 1896	New Haven, Conn.	615 George st.
Birdie Iva Beals, PH.B. } Univ. of Washington 1898	Burlington, Wash.	232 Columbus av.
Alling Prudden Beardsley, B.A. } Wesleyan University 1898	Derby, Conn.	Derby
Gertrude Harper Beggs, B.A. } University of Denver 1893	St. Louis, Mo.	224 Oak pl.
Bernhard Beinecke, PH.B. } Yale University 1898	New York City	36 Elm st.
Winchester Bennett, PH.B. } Yale University 1897	New Haven, Conn.	258 Church st.
Alexander Garner Bentley, B.A. } Yale University 1896	Washington, D. C.	A.
John Milton Berdan, B.A. } Yale University 1896	New York City	523 P.
Frederick Courtney Bishop, M.D. } Yale University 1895	New Haven, Conn.	1223 Chapel st.
Arthur Eli Booth, C.E. } Yale University 1893	Peace Dale, R. I.	3 Lake pl.
Malcom Booth, PH.B. } Yale University 1879	New Haven, Conn.	12 Gill st.
Zakar Elijah Boyajian, B.A. } Euphrates College 1895	Harpoot, Turkey	249 Crown st.
Marion Elizabeth Bradbury, B.A. } Wellesley College 1893	Melrose, Mass.	56 Whalley av.
Mercy Agnes Brann, B.A. } Colby University 1897	Dover, Me.	74 Lake pl.
William Edwin Breckenridge, B.A. } Yale University 1893	Montclair, N. J.	A.
Margaret Robinson Brendlinger, B.A. } Vassar College 1895	Philadelphia, Pa.	Norwalk

Arthur Brewer, PH.B. } Yale University 1897	<i>New Haven, Conn.</i>	415 Orange st.
Grace Irene Bridge, B.A. } Univ. of Nebraska 1895	<i>Fremont, Nebr.</i>	89 Whalley av.
John Law Bridge, B.S. } Wesleyan University 1888, PH.D. Clark University 1894	<i>Hamdenville, Conn.</i>	Waterbury
Howard Futhy Brinton, B.A. } Yale University 1898	<i>West Chester, Pa.</i>	99 Howe st.
John Merritt Bromley, B.A. } Yale University 1898	<i>New Haven, Conn.</i>	101 St. John st.
James Ansel Brooks, PH.B. } Yale University 1898	<i>Derby, Conn.</i>	66 Audubon st.
Curtis Palmer Brown, PH.B. } Yale University 1897	<i>New Haven, Conn.</i>	220 Lawrence st.
Ernest William Brown, PH.B. } Yale University 1897	<i>New Haven, Conn.</i>	106 Sherman av.
Herbert Stanley Brown, B.A. } Yale University 1896	<i>Detroit, Mich.</i>	340 Howard av.
William Adams Brown, B.A. } Yale University 1896, M.A. Yale University 1898	<i>New York City</i>	New York
Emory Gorsuch Buckingham, B.A. } Western Maryland College 1898	<i>Westminster, Md.</i>	333 York st.
Arthur Bumstead, B.A. } Yale University 1895	<i>Roxbury, Mass.</i>	313 York st.
Otis Gridley Bunnell, PH.B. } Yale University 1892	<i>Burlington, Conn.</i>	92 York sq.
Eugene Watson Burlingame, B.A. } Yale University 1898	<i>Albany, N. Y.</i>	A.
Curtis Clark Bushnell, PH.D. } Yale University 1895	<i>New Haven, Conn.</i>	92 York sq.
Harold Edgar Buttrick, B.A. } Yale University 1894	<i>Brooklyn, N. Y.</i>	A.
George William Carter, B.A. } Wesleyan University 1892, B.D. Drew Theol. Sem. 1893	<i>West Haven, Conn.</i>	West Haven
Burr Clark Chamberlin, PH.B. } Yale University 1897	<i>Dalton, Mass.</i>	332 Temple st.
George Peabody Chandler, B.A. } Yale University 1895	<i>Germanstown, Pa.</i>	46 College st.
William Woods Chandler, B.A. } Yale University 1896	<i>New Haven, Conn.</i>	31 High st.
Hannibal Hamlin Chapman, B.A. } Colby University 1897	<i>W. Bethel, Me.</i>	139 Dwight st.
Harvey Wood Chapman, B.A. } Yale University 1896	<i>Bridgeport, Conn.</i>	Bridgeport
William Churchill, B.A. } Yale University 1897	<i>New Britain, Conn.</i>	100 W. D.

Charles Upson Clark, B.A. } Yale University 1897	Brooklyn, N. Y.	Rome, Italy
George Harry Clark, PH.B. } Yale University 1896	New Haven, Conn.	125 Spring st.
Thomas Ludlow Clarke, B.A. } Yale University 1897	New York City	A.
Herdman Fitzgerald Cleland, B.A. } Oberlin College 1894	Pierce, Nebr.	55 N. S. H.
Henry Sloane Coffin, B.A. } Yale University 1897	New York City	A.
Edward L. Colebeck, B.A. } Northwestern University 1893, M.A. Northwestern University	Toledo, Iowa	159 Elm st.
Edward Day Collins, B.A. } Yale University 1896	Barton Landing, Vt.	571 P.
Molton Avery Colton, B.A. } Yale University 1898	New Haven, Conn.	104 Park st.
Lewis Roberts Conklin, B.A. } Yale University 1896	Monroe, N. Y.	A.
William Eugene Conklin, B.A. } Trinity College 1893	Hartford, Conn.	73 Lake pl.
Hollie May Conrey, B.A. } Nat'l. Normal Univ. 1894	Lebanon, O.	276 Orange st.
Charles Montague Cooke, Jr., B.A. } Yale University 1897	Honolulu, H. I.	343 George st.
Alberta Linton Corbin, B.A. } Univ. of Kansas 1893	Lawrence, Kansas	26 Howe st.
John Oscar Creager, B.A. } Yale University 1897	W. Manchester, O.	59 Prospect st.
James Judson Crossley, M.A. } State University of Iowa 1897	Wintusset, Iowa	128 Howe st.
Charles Edward Curtis, PH.B. } Yale University 1888	New Haven, Conn.	254 Prospect st.
George Barton Cutten, B.A. } Yale University 1897	Amherst, Nova Scotia	Montowese
Walter Wells Davis, B.A. } Leland Stanford, Jr., Univ. 1897	Maynard, Iowa	Gymnasium
Frederick Marcy DeForest, PH.D. } Yale University 1898	Bridgeport, Conn.	Bridgeport
Lee DeForest, PH.B. } Yale University 1896	Talladega, Ala.	63 W. D.
Moreau Delano, B.A. } Yale University 1898	New York City	A.
Elizabeth Street Dickerman, PH.D. } Yale University 1896	New Haven, Conn.	46 Lake pl.
Sherwood Owen Dickerman, B.A. } Yale University 1896	New Haven, Conn.	Athens, Greece
Louise Dodge	Danvers, Mass.	77 Grove st.

George Francis Dominick, Jr., B.A.	{	<i>New York City</i>	A.
Yale University 1894			
Edgar Selah Downs, B.A.	{	<i>Southington, Conn.</i>	1157 Chapel st.
Yale University 1898			
Schmucker Duncan, M.A.	{	<i>Gettysburg, Pa.</i>	1142 Chapel st.
Yale University 1894			
Edward Lewis Durfee, B.A.	{	<i>Palmyra, N. Y.</i>	571 P.
Yale University 1896			
John Eastlund, B.S.	{	<i>Lindsborg, Kansas</i>	218 Mansfield st.
Bethany College 1898			
George Francis Eaton, PH.D.	{	<i>New Haven, Conn.</i>	70 Sachem st.
Yale University 1898			
Gaston Holcomb Edwards, PH.B.	{	<i>Granby, Conn.</i>	57 Prospect st.
Yale University 1897			
Jay Glover Eldridge, B.A.	{	<i>Penfield, N. Y.</i>	39 Lake pl.
Yale University 1896			
Alexander William Evans, PH.B.	{	<i>New Haven, Conn.</i>	2 Hillhouse av.
Yale University 1890			
Evore Evans, B.D.	{	<i>Ellsworth, Conn.</i>	31 Beers st.
Yale University 1895			
Samuel John Evers, B.A.	{	<i>Glenbrook, Conn.</i>	Glenbrook
Lebanon Valley Coll. 1891,			
B.D. Yale University 1895			
Arthur Woolsey Ewell, B.A.	{	<i>Washington, D. C.</i>	1010 Chapel st.
Yale University 1897			
Charles Kingsley Fankhauser, B.A.	{	<i>Avon, Conn.</i>	121 Dwight st.
Marietta College 1893,			
B.D. Yale University 1896			
Bennett William Farnham, PH.B.	{	<i>Westville, Conn.</i>	Westville
Yale University 1897			
Hollon Augustus Farr, B.A.	{	<i>Athol, Mass.</i>	333 York st.
Yale University 1896			
Albert Baldwin Fifield, B.A.	{	<i>New Haven, Conn.</i>	442 George st.
Yale University 1878			
Allyn King Foster, TH.M.	{	<i>New Haven, Conn.</i>	140 Shelton av.
So. Baptist Theol. Sem. 1894			
John Marshall Gaines, B.A.	{	<i>New Haven, Conn.</i>	530 P.
Yale University 1896			
Arthur James Gammach, M.A.	{	<i>W. Hartford, Conn.</i>	80 Broadway
Trinity College of Toronto 1891			
Silas Wright Geis, B.L.	{	<i>Fresno, Cal.</i>	83 Sachem st.
Univ. of California 1898			
Karl Frederick Geiser, PH.B.	{	<i>Fayette, Iowa</i>	47 Lake pl.
Upper Iowa University 1893			
Isaac Thomas Gillam, Jr., B.A.	{	<i>Little Rock, Ark.</i>	1016 Chapel st.
Howard University 1898			
George Wilbur Fiske Gillette, PH.B.	{	<i>New Haven, Conn.</i>	9 Eld st.
Yale University 1896			

William Anthony Granville, PH.D. } Yale University 1897	<i>New Haven, Conn.</i>	7½ Eld st.
Roland Palmer Gray, B.A. } Columbia University 1893	<i>Rochester, N. Y.</i>	337 Orange st.
Herbert Ernest Gregory, B.S. } Gates College 1890, B.A. Gates 1895 and Yale Univ. 1896	<i>Neligh, Nebr.</i>	55 N. S. H.
John Lewis Gregory, PH.B. } Yale University 1897	<i>Erie, Pa.</i>	200 Grove st.
Matthew Griswold, Jr., PH.B. } Yale University 1888	<i>Erie, Pa.</i>	A.
William Henry Hackett, B.A. } Yale University 1893	<i>New Haven, Conn.</i>	143 West st.
William Edwin Haesche, MUS.B. } Yale University 1897	<i>New Haven, Conn.</i>	246 Atwater st.
Archibald McClellan Hall, PH.D. } Butler University 1892, B.D. Yale University 1897	<i>Irvington, Ind.</i>	8 E. D.
Herbert Franklin Hamilton, B.A. } Amherst College 1897	<i>Greenfield, Mass.</i>	90 Whalley av.
Maude Hammond, B.A. } University of Nebraska 1894, M.A. Univ. of Nebraska 1897	<i>Lincoln, Nebr.</i>	89 Whalley av.
Josiah Harmar, PH.B. } Yale University 1892	<i>Philadelphia, Pa.</i>	A.
Ella Isabel Harris, M.A. } Waynesburg College 1892	<i>Westfield, N. J.</i>	47 York sq.
Francis Burton Harrison, B.A. } Yale University 1895	<i>New York City</i>	A.
Carl Axel Harström, M.A. } Hobart College 1886	<i>Norwalk, Conn.</i>	Norwalk
Joseph Hall Hart, B.A. } Yale University 1898	<i>Cincinnati, O.</i>	527 P.
Joseph Culver Hartzell, B.S. } U. S. Grant University 1892, M.S. U. S. Grant Univ. 1895	<i>Baltimore, Md.</i>	74 Lake pl.
Franke Stuart Havens, B.A. } Yale University 1896	<i>Hartford, Conn.</i>	427 Temple st.
Edward Stone Hawes, M.A. } Amherst College 1893	<i>Burlington, Vt.</i>	254 Crown st.
Mabel Cary Hawes, B.A. } Wellesley College 1891	<i>Burlington, Vt.</i>	254 Crown st.
Herbert Edwin Hawkes, B.A. } Yale University 1896	<i>New Haven, Conn.</i>	391 Edgewood av.
William Wilson Heaton, B.A. } Yale University 1896	<i>New York City</i>	A.
William Milton Hess, B.A. } Yale University 1896	<i>Philadelphia, Pa.</i>	333 York st.

Mary Cornwall Hewitt, B.A. } Smith College 1897	<i>New Haven, Conn.</i>	65 Dixwell av.
Clara Maria Hitchcock, PH.B. } University of Chicago 1897	<i>Michigan City, Ind.</i>	34 Hillhouse av.
James Ladd Hitchcock, PH.B. } Yale University 1897	<i>Buffalo, N. Y.</i>	120 High st.
Robert Reynolds Hitt, B.A. } Yale University 1898	<i>Washington, D. C.</i>	A.
Richard Thayer Holbrook, B.A. } Yale University 1893	<i>Yonkers, N. Y.</i>	170 F.
Edwin Knight Holden, B.A. } University of Wisconsin 1882, B.D. Yale University 1886	<i>Bridgeport, Conn.</i>	Bridgeport
Frederick Augustus Holden, B.A. } Amherst College 1878	<i>Burlington, Conn.</i>	Burlington
George Clay Hollister, B.A. } Yale University 1896	<i>New York City</i>	A.
Charles Henry Huberich, LL.B. } University of Texas 1897, LL.M. University of Texas 1898	<i>San Antonio, Tex.</i>	276 Elm st.
Charles Rollin Hudson, B.A. } Indiana University 1897	<i>Franklin, Ind.</i>	89 w. D.
Robert Ernest Hume, B.A. } Yale University 1898	<i>Ahmednagar, India</i>	24 Home pl.
Agnes Hunt, B.A. } Smith College 1897	<i>Manchester, N. H.</i>	83 Grove st.
Lola LaMotte Iddings, B.A. } Vassar College 1889	<i>Orange, N. J.</i>	Orange
Howard Maxwell Ingham, PH.B. } Yale University 1897	<i>Philadelphia, Pa.</i>	117 Wall st.
Frank Irwin, M.A. } Harvard University 1890	<i>New Haven, Conn.</i>	57 Wall st.
Howard Chapin Ives, PH.B. } Yale University 1898	<i>West Cheshire, Conn.</i>	625 George st.
Holmes Condict Jackson, PH.B. } Yale University 1896	<i>Newark, N. J.</i>	2 Hillhouse av.
William Julius Edward Jente, B.A. } Yale University 1897	<i>New Haven, Conn.</i>	97 Bristol st.
Harry Benjamin Jepson, B.A. } Yale University 1893, mus.B. Yale University 1894	<i>New Haven, Conn.</i>	52 Howe st.
Frederic Blair Johnson, B.A. } Yale University 1896	<i>Boston, Mass.</i>	A.
Treat Baldwin Johnson, PH.B. } Yale University 1898	<i>Bethany, Conn.</i>	60 Grove st.
William Smythe Johnson, M.A. } Ouachita Bapt. College 1895	<i>Arkadelphia, Ark.</i>	47 Lake pl.
Edward Clinton Jones, B.A. } Yale University 1895	<i>New Haven, Conn.</i>	84 William st.

Louis Cleveland Jones, B.A. } Yale University 1896	<i>E. Durham, N. Y.</i>	Kent Lab'y.
Tyichi Kairiyama, PH.B. } Cornell University 1898	<i>Yokohama, Japan</i>	99 Howe st.
Kevork Harutune Kazanjian, B.D. } Yale University 1892	<i>New Haven, Conn.</i>	200 Edgewood av.
Alfred Sewell Kedzie, PH.B. } Adrian College 1891, B.A. Adrian College 1893	<i>New Haven, Conn.</i>	495 Elm st.
Albert Galloway Keller, B.A. } Yale University 1896	<i>Milford, Conn.</i>	270 Edgewood av.
George Dwight Kellogg, PH.D. } Yale University 1898	<i>Cambridge, Mass.</i>	90 S. M.
Calvin Noyes Kendall, B.A. } Hamilton College 1882	<i>New Haven, Conn.</i>	139 Humphrey st.
Edward Gridley Kendall, B.A. } Yale University 1895	<i>New Haven, Conn.</i>	62 Lake pl.
Frederick Wilkinson Kilbourne, PH.D. } Yale University 1897	<i>Meriden, Conn.</i>	Meriden
Richard Shelton Kirby, C.E. } Yale University 1898	<i>Port Chester, N. Y.</i>	317 Crown st.
Charles Fronefield Kloss, B.A. } Pennsylvania College 1894	<i>Tyrone, Pa.</i>	62 Lake pl.
Tozaburo Kudo, M.A. } De Pauw University 1896	<i>Tokyo, Japan</i>	73 Lake pl.
Howard La Field, B.A. } Yale University 1891	<i>Delafield, Wisc.</i>	A.
Joshua Larson, B.A. } Augustana College 1889	<i>Altona, Ill.</i>	149 St. John st.
Edward Herman Lay, B.A. } Yale University 1894	<i>New London, Conn.</i>	A.
Charles Samuel Leavenworth, B.A. } Wesleyan University 1896 and Yale University 1897	<i>New Haven, Conn.</i>	79 Howe st.
Edwin Hoyt Lockwood, M.E. } Yale University 1892	<i>New Canaan, Conn.</i>	55 Prospect st.
Laura Emma Lockwood, B.A. } University of Kansas 1891 PH.D. Yale University 1898	<i>New Haven, Conn.</i>	78 Dwight st.
Arthur Power Lord, B.A. } Yale University 1893, M.A. Yale University 1896	<i>Paris, France</i>	89 Trumbull st.
Frederick Bliss Luquens, B.A. } Yale University 1897	<i>New Haven, Conn.</i>	201 Bishop st.
Cloyd North McAllister, B.A. } Yale University 1892	<i>New Haven, Conn.</i>	33 Lake pl.
Timothy Robnett MacAnally, B.A. } Southern Normal University 1895	<i>Greenville, Tex.</i>	47 Lake pl.

Eugene Irving McCormac, B.S. } Upper Iowa University 1896	<i>Sumner, Iowa</i>	47 Lake pl.
George Grant MacCurdy, B.A. } Harvard University 1893, M.A. Harvard University 1894	<i>New Haven, Conn.</i>	33 Wall st.
Charles Stedman Macfarland, B.D. } Yale University 1897	<i>Melrose, Mass.</i>	23 E. D.
Mary Elizabeth McLean, PH.B. } Univ. of California 1889	<i>Lawrenceville, Pa.</i>	210 Prospect st.
Winfield Scott Manship, B.A. } Wesleyan University 1886, B.D. Yale University 1889	<i>S. Meriden, Conn.</i>	S. Meriden
Milton Mozart Marble, B.A. } Harvard University 1889	<i>New Haven, Conn.</i>	673 Elm st.
William Crosby Marshall, M.E. } Yale University 1894	<i>Cromwell, Conn.</i>	472 Orange st.
Harriet Anna Merrill, B.A. } Wellesley College 1898	<i>New Haven, Conn.</i>	115 York st.
Alfred Kindred Merritt, B.A. } Yale University 1893	<i>Brainerd, Minn.</i>	267 L.
Robert Hume Miller, B.A. } Yale University 1897	<i>New Haven, Conn.</i>	133 Wall st.
Edward Eastman Minor, PH.B. } Yale University 1896	<i>New Haven, Conn.</i>	123 Columbus av.
George Alonzo Mirick, M.A. } Amherst College 1896	<i>New Haven, Conn.</i>	84 Wall st.
Sydney Knox Mitchell, B.A. } Yale University 1898	<i>Lakeville, N. Y.</i>	104 Park st.
Ishiro Miyake, } Doshisha University, Japan, 1894	<i>Kumamoto, Japan</i>	119 Park st.
Rose Ruth Morgan, B.A. } University of Kansas 1894	<i>Leavenworth, Kan.</i>	26 Howe st.
William Conger Morgan, B.A. } Yale University 1896	<i>Albany, N. Y.</i>	Kent Lab'y.
Arthur Boothby Morrill, B.A. } Yale University 1873	<i>New Haven, Conn.</i>	459 Orange st.
Oliver Cromwell Morse, B.A. } Yale University 1868	<i>Winter Park, Fla.</i>	1079 Chapel st.
John Killam Murphy, B.A. } Yale University 1897, PH.B. Yale University 1898	<i>New Haven, Conn.</i>	85 Sachem st.
Henry Hotchkiss Murray, PH.B. } Yale University 1893	<i>Viola, Del.</i>	A.
Irene Tanner Myers, M.A. } Bethany College 1889	<i>Wheeling, W. Va.</i>	47 York st.
George Henry Nettleton, B.A. } Yale University 1896	<i>Boston, Mass.</i>	57 Wall st.
John Treadwell Norton, Jr., B.A. } Yale University 1898	<i>Albany, N. Y.</i>	90 Whalley av.

George Kingsley Olmsted, PH.B. Colorado College 1894, PH.D. Yale University 1898	}	Hartford, Conn.	59 Prospect st.
Julius Olsen, B.S. Bethany College 1898	}	Norway, Kan.	218 Mansfield st.
Charles Grosvenor Osgood, Jr., B.A. Yale University 1894	}	Wellsboro, Pa.	139 Dwight st.
Rufus Melvin Overlander, B.A. Yale University 1898	}	New Haven, Conn.	69 Church st.
Frederick Morgan Padelford, B.A. Colby University 1896	}	Calais, Me.	139 Dwight st.
Elizabeth Hatch Palmer, B.A. Wellesley College 1887	}	Ipswich, Mass.	58 Park st.
William Huntington Parker, B.S. Worcester Polytechnic Institute 1893	}	New Haven, Conn.	648 Elm st.
Herbert Parsons, B.A. Yale University 1897	}	New York City	A.
Leona May Peirce, B.A. Smith College 1886	}	Springfield, Mass.	Springfield
Paul Skeels Peirce, PH.B. Cornell University 1897	}	Ithaca, N. Y.	22 Whalley av.
Charles Adams Peters, B.S. Boston University 1897	}	Worcester, Mass.	74 Lake pl.
Israel Hyman Peres, B.A. Yale University 1889	}	Memphis, Tenn.	A.
William Kinney Pike, PH.B. Yale University 1897	}	South Killingly, Conn.	A.
Miles Albion Pond, PH.B. Yale University 1892	}	Torrington, Conn.	57 Grove st.
John Rush Powell, B.A. Yale University 1897	}	Waco, Texas	121 York st.
Alexander Pratt, Jr., B.A. Trinity College 1898	}	Bridgeport, Conn.	Bridgeport
Walter Franklin Prince, B.A. Yale University 1896	}	Detroit, Me.	296 Columbus av.
Charles Theodore Ramsden, PH.B. Yale University 1896	}	Santiago de Cuba, Cuba	A.
Frederick Archer Raymond, PH.B. Yale University 1896	}	Norwalk, Conn.	196 Grove st.
Albert Sidney Reid, B.A. Drake University 1896	}	New Haven, Conn.	112 Olive st.
Chauncey Brewster Rice, PH.B. Yale University 1894	}	New Haven, Conn.	56 N. S. H.
Alfred Ernest Richards, B.A. Yale University 1898	}	Hartford, Conn.	90 Whalley av.
Ernest Gladstone Richardson, B.A. Dickinson College 1896	}	Wallingford, Conn.	Wallingford
Julian Ashton Ripley, B.A. Yale University 1898	}	New York City	A.

Frederick Oscar Robbins, B.A. } Yale University 1896	Greenville, N. H. 227 Sherman av.
Ernest Lauren Robinson, B.A. } Yale University 1894	Cheshire, Conn. A.
Evelina Sophia Robinson, B.A. } Granville Female College 1874	Granville, O. 183 Lawrence st.
Henry Hollister Robinson, PH.B. } Yale University 1895	Hartford, Conn. 333 York st.
James Francis Chalfant Robinson, B.L. } University of Cincinnati 1893	Cincinnati, O. 94 Lake pl.
Maurice Henry Robinson, B.L. } Dartmouth College 1890, M.A. Dartmouth College 1897	Madelia, Minn. 525 Winthrop av.
Edith Antoinette Rockwell, B.L. } Smith College 1896	New Haven, Conn. 281 Crown st.
Robert Kilburn Root, B.A. } Yale University 1898	New Haven, Conn. 58 Grove st.
Louis Barcroft Runk, B.A. } Yale University 1893	Philadelphia, Pa. A.
William Nelson Runyon, B.A. } Yale University 1892	Plainfield, N. J. A.
Teinosuke Sakata, } Doshisha University, Japan, 1892, M.A. Yale University 1897	Kyoto, Japan 99 Howe st.
Charles Edward Sargent, M.A. } Bates College 1883	New Haven, Conn. 187 Lawrence st.
Myron Tracy Scudder, B.A. } Rutgers College 1882	New Haven, Conn. 156 Humphrey st.
William Edward Selin, B.A. } Yale University 1898	Chicago, Ill. 63 W. D.
George Tucker Sellew, M.A. } University of Rochester 1889, PH.D. Yale University 1898	New Haven, Conn. 4 Lake pl.
Mark Edgar Sentelle, B.A. } Davidson College 1894, M.A. Davidson College 1897	Hermon, Tenn. 73 Lake pl.
Horace Emerson Setchell, PH.B. } Yale University 1897	New Haven, Conn. 216 English st.
William Kent Shepard, PH.B. } Yale University 1897	New Haven, Conn. 48 N. S. H.
Susan Smith Sheridan, B.A. } University of Omaha 1897	New Haven, Conn. 519 Orange st.
Oliver Taylor Sherwood, B.A. } Yale University 1884	Southport, Conn. Southport
Chohei Shirasu, } Doshisha University, Japan, 1893	Kobe, Japan 1494 Chapel st.
Elmer Ellsworth Shoemaker, B.A. } Harvard University 1889	Glenburn, Pa. 215 Edgewood av.

Herbert Augustine Smith, PH.D. } Yale University 1897	New Haven, Conn.	4 Mansfield st.
Chester Stone Spencer, PH.B. } Yale University 1894	Guilford, Conn.	A.
Frederick Clarence Spencer, PH.B. } Yale University 1893	Old Saybrook, Conn.	58 N. S. H.
Frederick Noyes Sperry, M.D. } Yale University 1894	New Haven, Conn.	76 Wooster st.
Samuel Hamilton Spragins, B.A. } Johns Hopkins University 1897	Baltimore, Md.	373 Crown st.
Alfred Hall Stevens, PH.B. } Yale University 1893	Clinton, Conn.	A.
Charles Emerson Stone, PH.B. } Yale University 1889	Andover, Mass.	A.
Wendell Melville Strong, M.A. } Cornell University 1894, PH.D. Yale University 1898	Montclair, N. J.	307 W.
Samuel Cryder Sturgis, B.A. } South Carolina College 1885	Fair Forest, S. C.	1090 Chapel st.
Margaret Sweeney	Boston, Mass.	415 George st.
John Trumbull Swift, B.A. } Yale University 1884	Colchester, Conn.	107 W. D.
Emerson Gifford Taylor, B.A. } Yale University 1895	Hartford, Conn.	Hartford
Robert Longley Taylor, B.A. } Hamilton College 1882	New Haven, Conn.	67 Mansfield st.
William James Taylor, B.A. } University of Nebraska 1891, M.A. University of Nebraska	New Haven, Conn.	219 Columbus av.
Wilmot Haines Thompson, B.A. } Yale University 1898	New Haven, Conn.	37 Beers st.
Edward Montclair Tillinghast, B.A. } Yale University 1888	New Haven, Conn.	364 Mansfield st.
John Quillin Tilson, B.A. } Yale University 1891, M.L. Yale University 1894	Clear Branch, Tenn.	550 P.
William Valentine, PH.B. } Yale University 1897	New York City	162 S. L.
Joseph King VanDenburg, B.A. } Wesleyan University 1895, M.A. Wesleyan University 1898	Fort Edward, N. Y.	78 Lake pl.
Cornelius Vanderbilt, Jr., B.A. } Yale University 1895, PH.B. Yale University 1898	New York City	A.
Robert Pierce Walker, B.A. } Maryville College 1894	Maryville, Tenn.	47 Lake pl.
Arthur Gillender Walter, B.A. } Yale University 1896	New Haven, Conn.	267 Portsea st.

Lulu Ware, B.S. } Nat'l. Normal Univ. 1893 }	Eaton, O.	47 York sq.
John Dorrance Warnock, B.A. } Yale University 1893 }	Cheshire, Conn.	Cheshire
Charles Hyde Warren, PH.B. } Yale University 1896 }	Watertown, Conn.	57 N. S. H.
Charles Heald Weller, B.A. } Yale University 1895 }	New Haven, Conn.	17 Parmelee av.
Mary Crowell Welles, B.A. } Smith College 1883 }	Newington, Conn.	33 Wall st.
Chauncey Wetmore Wells, B.A. } Yale University 1896 }	Middletown, Conn.	203 Lawrence st.
Jacob Westlund, PH.D. } Yale University 1898 }	Lindsborg, Kan.	218 Mansfield st.
Edward Moffat Weyer, B.A. } Yale University 1895, PH.D. Univ. Leipzig 1898 }	St. Louis, Mo.	75 Broadway
Alexander Wheeler, B.A. } Yale University 1897 }	Bridgeport, Conn.	Bridgeport
Lynde Phelps Wheeler, PH.B. } Yale University 1894 }	New Haven, Conn.	333 York st.
William Arthur Whitcomb, PH.B. } Yale University 1895 }	Glens Falls, N. Y.	A.
Charles Huntington Whitman, B.A. } Colby University 1897 }	Bangor, Me.	139 Dwight st.
John Whitmore, PH.D. } Yale University 1892 }	New Haven, Conn.	147 Bradley st.
Josiah Dwight Whitney, B.A. } Yale University 1898 }	Beloit, Wisc.	333 York st.
Marian Parker Whitney	New Haven, Conn.	227 Church st.
George Reber Wieland, B.S. } Pennsylvania State College 1893 }	Chester, Pa.	58 Mansfield st.
Meyer Wolodarsky, PH.B. } Yale University 1894 }	New Haven, Conn.	255 Columbus av.
Ruth Goulding Wood, B.L. } Smith College 1898 }	Pawtucket, R. I.	144 Greene st.
Alice Lincoln Wright, B.A. } Wellesley College 1897 }	New Haven, Conn.	128 York st.
Henry Burt Wright, B.A. } Yale University 1898 }	New Haven, Conn.	Dwight Hall
Minosuke Yamaguchi, B.A. } Lombard University 1897 }	Kurume, Japan	73 Lake pl.
Seiichi Yamaguchi, } Doshisha University, Japan, 1896 }	Kyoto, Japan	115 Elm st.
Yochi Yamaguchi, } Doshisha University, Japan, 1896 }	Kyoto, Japan	244 Orchard st.
Masajiro Yokoyama, } Doshisha University, Japan, 1896 }	Okayama, Japan	123 Park st.

GRADUATE STUDENTS, 290

GRADUATE SCHOOL

OF

YALE UNIVERSITY

COURSES OF INSTRUCTION

FOR

1900-1901

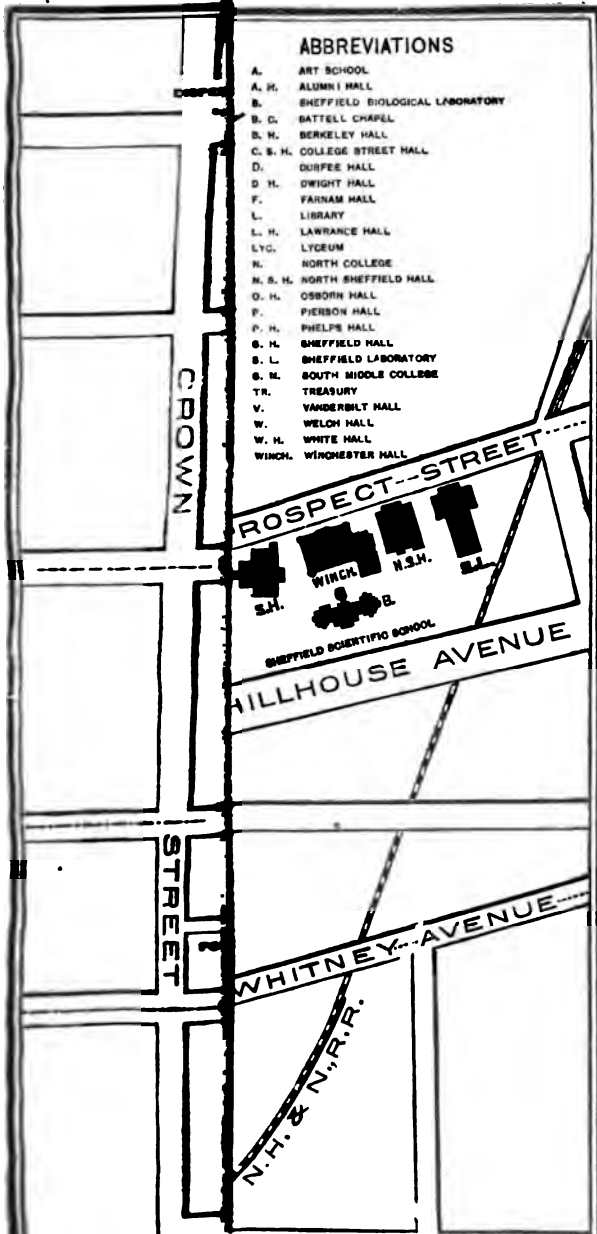


NEW HAVEN

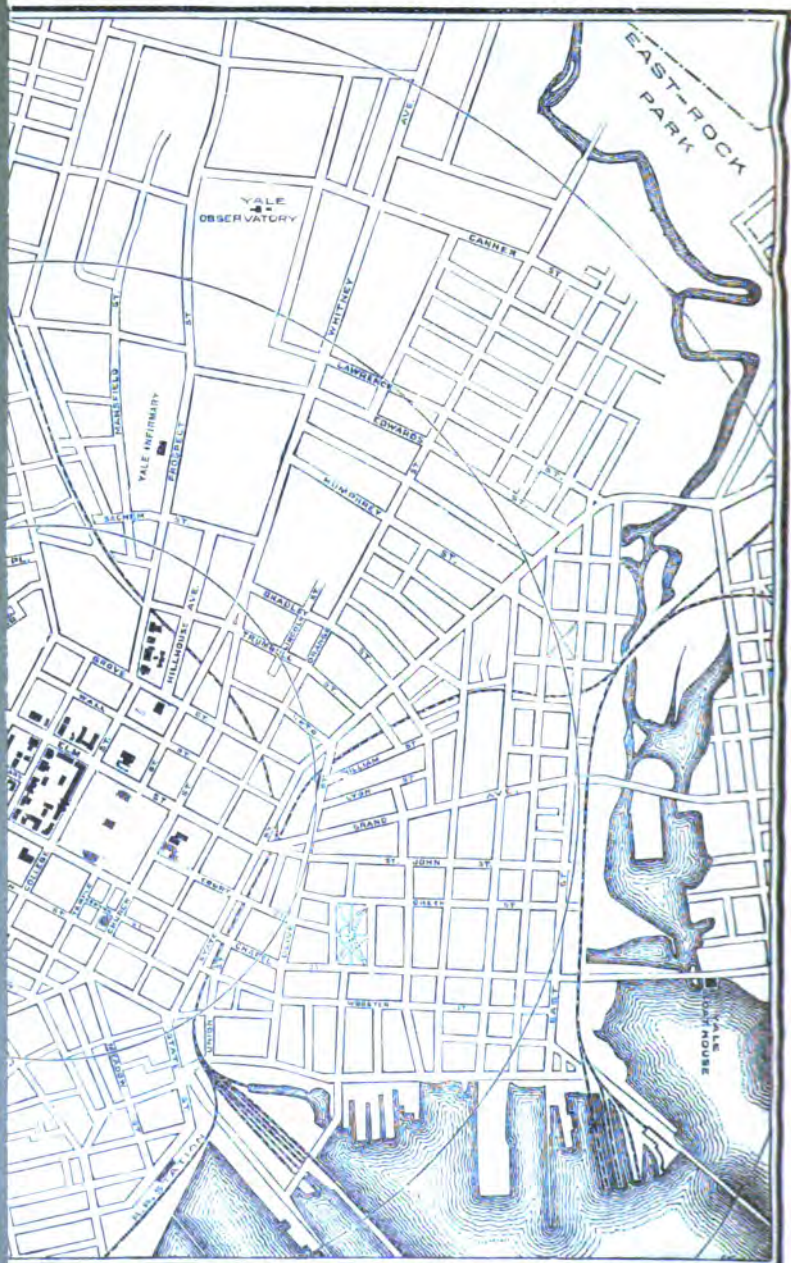
1900

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VI. Natural and Physical Science	30
VII. Mathematics	35
VIII. The Fine Arts	40
IX. Music	45
X. Physical Culture	50



NEW HAVEN.



GRADUATE SCHOOL
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FOR

1900-1901



NEW HAVEN:

1900

CALENDAR

1900

27 Sept.	Thursday	FIRST TERM begins.
28 Nov.	Wednesday	THANKSGIVING RECESS begins, 1.20 P. M.
30 Nov.	Friday	RECESS ends, 8 A. M.
19 Dec.	Wednesday	FIRST TERM ends.

Winter Vacation

1901

8 Jan.	Tuesday	SECOND TERM begins.
3 April	Wednesday	SPRING RECESS begins, 1.20 P. M.
11 April	Thursday	RECESS ends, 8 A. M.
15 May	Wednesday	Anniversary of the Divinity School.
28 May	Tuesday	School of the Fine Arts, term ends.
23 June	Sunday	Baccalaureate Sermon.
26 June	Wednesday	COMMENCEMENT.

Summer Vacation

26 Sept.	Thursday	FIRST TERM begins.
18 Dec.	Wednesday	FIRST TERM ends.

For information with regard to the Graduate School, not contained in this pamphlet, and also with regard to Fellowships and Scholarships (see page 14), address the Dean,

Professor ANDREW W. PHILLIPS.

GRADUATE SCHOOL

FACULTY

ARTHUR T. HADLEY, LL.D., PRESIDENT
WILLIAM H. BREWER, PH.D., *Professor of Agriculture*
JOHN E. CLARK, M.A., *Professor of Mathematics*
ARTHUR M. WHEELER, LL.D., *Professor of History*
JOHN F. WEIR, N.A., M.A., *Professor of Painting and Design*
J. WILLARD GIBBS, PH.D., LL.D., *Professor of Mathematical Physics*
CHARLES B. RICHARDS, M.A., *Professor of Mechanical Engineering*
ARTHUR W. WRIGHT, PH.D., *Professor of Experimental Physics*
THOMAS R. LOUNSBURY, LL.D., L.H.D., *Professor of English*
EUGENE L. RICHARDS, M.A., *Professor of Mathematics*
JOHN H. NIEMEYER, M.A., *Professor of Drawing*
TRACY PECK, M.A., *Professor of Latin*
ADDISON E. VERRILL, M.A., *Professor of Zoology*
WILLIAM G. SUMNER, LL.D., *Professor of Political and Social Science*
REV. GEORGE T. LADD, D.D., LL.D., *Professor of Philosophy*
CHARLES H. SMITH, LL.D., *Professor of American History*
SIDNEY I. SMITH, M.A., *Professor of Comparative Anatomy*
WILLIAM G. MIXTER, M.A., *Professor of Chemistry*
HENRY P. WRIGHT, PH.D., LL.D., *Professor of Latin*
HENRY S. WILLIAMS, PH.D., *Professor of Geology*
HENRY A. BEERS, M.A., *Professor of English Literature*
A. JAY DUBOIS, C.E., PH.D., *Professor of Civil Engineering*
BERNADOTTE PERRIN, PH.D., LL.D., *Professor of Greek*
EDWARD S. DANA, PH.D., *Professor of Physics*
THOMAS D. SEYMOUR, LL.D., *Professor of Greek*
CHARLES S. HASTINGS, PH.D., *Professor of Physics*
FRANK A. GOOCH, PH.D., *Professor of Chemistry*
ALBERT S. COOK, PH.D., L.H.D., *Professor of English*
WILLIAM BEEBE, M.A., *Professor of Mathematics and Instructor in
Astronomy*

ANDREW W. PHILLIPS, PH.D., *Dean, and Professor of Mathematics*
 GEORGE B. ADAMS, PH.D., *Professor of History*
 SAMUEL S. SANFORD, M.A., *Professor of Applied Music*
 HENRY W. FARNAM, R.P.D., *Professor of Political Economy*
 EDWARD P. MORRIS, M.A., *Professor of Latin*
 HENRY R. LANG, PH.D., *Professor of Romance Languages*
 RUSSELL H. CHITTENDEN, PH.D., *Professor of Physiological Chemistry*
 SAMUEL L. PENFIELD, M.A., *Professor of Mineralogy*
 HORACE L. WELLS, M.A., *Professor of Analytical Chemistry and
 Metallurgy*
 THOMAS D. GOODELL, PH.D., *Professor of Greek*
 CHARLES E. BEECHER, PH.D., *Professor of Historical Geology*
 EDWARD WASHBURN HOPKINS, PH.D., *Professor of Sanskrit and Com-
 parative Philology*
 ARTHUR H. PALMER, M.A., *Professor of German*
 HORATIO M. REYNOLDS, M.A., *Professor of Greek*
 GEORGE M. DUNCAN, M.A., *Professor of Philosophy*
 E. HERSHEY SNEATH, PH.D., *Professor of Philosophy*
 FRANK K. SANDERS, PH.D., *Professor of Biblical Literature*
 LOUIS V. PIRSSON, PH.B., *Professor of Inorganic Geology*
 EDWARD G. BOURNE, PH.D., *Professor of History*
 GUSTAV GRUENER, PH.D., *Professor of German*
 CHARLES C. TORREY, PH.D., *Professor of Semitic Languages*
 HORATIO W. PARKER, M.A., *Professor of Music*
 JOHN C. SCHWAB, PH.D., *Professor of Political Science*
 CHARLTON M. LEWIS, PH.D., *Professor of English*
 ROBERT N. CORWIN, PH.D., *Professor of German*
 IRVING FISHER, PH.D., *Professor of Political Economy*
 JAMES PIERPONT, PH.D., *Professor of Mathematics*
 HENRY C. EMERY, PH.D., *Professor of Political Economy*

OTHER INSTRUCTORS

REV. GEORGE P. FISHER, D.D., LL.D., *Professor of Ecclesiastical History*
 REV. EDWARD L. CURTIS, PH.D., D.D., *Professor of Hebrew*
 WILLIAM K. TOWNSEND, D.C.L., *Professor of Contracts and Admiralty
 Jurisprudence*

GEORGE L. FOX, M.A., *Lecturer on Municipal Administration*

REV. WILLIAM F. BLACKMAN, PH.D., *Professor of Christian Ethics*

HON. EDWIN B. GAGER, B.A., *Instructor in Law*

SAMUEL E. BARNEY, C.E., *Assistant Professor of Civil Engineering*

FREDERICK WELLS WILLIAMS, B.A., *Instructor in Oriental History*

WILLIAM J. COMSTOCK, PH.B., *Instructor in Organic Chemistry*

JAY W. SEAVER, M.D., *Associate Director of the Gymnasium*

REV. FRANK C. PORTER, PH.D., D.D., *Professor of Biblical Theology*

REV. BENJAMIN W. BACON, LITT.D., D.D., *Professor of New Testament Greek*

ROBERT L. TAYLOR, B.A., *Instructor in French*

WILLIAM G. ANDERSON, M.D., *Associate Director of the Gymnasium*

EDWARD W. SCRIPTURE, PH.D., *Director of the Psychological Laboratory*

WILBUR L. CROSS, PH.D., *Assistant Professor of English*

THOMAS C. STEARNS, PH.D., *Instructor in Ancient Philosophy*

WILLIAM LYON PHELPS, PH.D., *Assistant Professor of English Literature*

HANNS OERTEL, PH.D., *Assistant Professor of Comparative Philology*

PERCY F. SMITH, PH.D., *Assistant Professor of Mathematics*

WARREN J. MOULTON, PH.D., *Instructor in Biblical Literature*

HENRY DAVIES, PH.D., *Lecturer on the History of Philosophy*

ALEXANDER W. EVANS, M.D., PH.D., *Instructor in Botany*

HENRY L. WHEELER, PH.D., *Assistant Professor of Organic Chemistry*

OLIVER H. RICHARDSON, PH.D., *Assistant Professor of History*

PHILIP E. BROWNING, PH.D., *Assistant Professor of Chemistry*

JAMES LOCKE, PH.D., *Instructor in Chemistry*

MAURICE H. ROBINSON, B.A., *Instructor in Political Economy*

LAFAYETTE B. MENDEL, PH.D., *Assistant Professor of Physiological Chemistry*

JAMES W. D. INGERSOLL, PH.D., *Assistant Professor of Latin*

HENRY S. GRAVES, B.A., *Professor of Forestry*

GEORGE P. STARKWEATHER, PH.D., *Instructor in Applied Mechanics*

WESLEY R. COB, PH.D., *Instructor in Biology*

BERTRAM B. BOLTWOOD, PH.D., *Instructor in Analytical Chemistry*

GEORGE R. MONTGOMERY, B.A., *Lecturer in Philosophy*

ARTHUR L. WHEELER, PH.D., *Tutor in Latin*

T. WOOLSEY HEERMANCE, PH.D., *Instructor in Greek Archaeology*

RICHARD T. HOLBROOK, B.A., *Tutor in Romance Languages*
EDSON F. GALLAUDET, PH.D., *Instructor in Physics.*
WILLIAM B. BAILEY, PH.D., *Instructor in Statistics*
GERVASE GREEN, PH.D., *Instructor in Philosophy and Pedagogy*
MEYER WOLODARSKY, PH.D., *Instructor in Rabbinical Literature*
ALBERT G. KELLER, PH.D., *Instructor in Social Science*
HERBERT E. HAWKES, B.A., *Instructor in Mathematics*
HERBERT E. GREGORY, PH.D., *Instructor in Physical Geography*
SHERWOOD O. DICKERMAN, B.A., *Tutor in Greek*
EDWIN B. WILSON, B.A., *Instructor in Mathematics*

ADMINISTRATIVE COMMITTEE,

WITH CONSULTATION HOURS .

ARTHUR T. HADLEY, LL.D., PRESIDENT,

Room 6, Treasury Building, daily, 8.30 A. M. to 1 P. M.

ANDREW W. PHILLIPS, PH.D., DEAN, *and Professor of Mathematics,*

90 High street, daily, except Saturday, 2.30 to 4 P. M.

ARTHUR M. WHEELER, LL.D., *Professor of History,*

C, Osborn Hall, Monday and Friday, 10.30 A. M. to 12.30 P. M.

CHARLES B. RICHARDS, M.A., *Professor of Mechanical Engineering,*

112 Winchester Hall, 9 A. M. to 12 M., Wednesday and Saturday.

REV. GEORGE T. LADD, D.D., LL.D., *Professor of Philosophy,*

275 Lawrance Hall, Wednesday and Saturday, 10 to 11 A. M.

THOMAS D. SEYMOUR, LL.D., *Professor of Greek,*

22 Phelps Hall, daily, 11 A. M. to 12 M.

ALBERT S. COOK, PH.D., L.H.D., *Professor of English,*

219 Bishop street, daily, 2 P. M.

HENRY W. FARNAM, R.P.D., *Professor of Political Economy,*

43 Hillhouse av., daily, 2 to 3 P. M.

RUSSELL H. CHITTENDEN, PH.D., *Professor of Physiological Chemis-*

try and Director of the Sheffield Scientific School, 3 Sheffield Hall,

Monday, Tuesday, Wednesday, and Thursday, 10 A. M. to 12 M.

FRANK K. SANDERS, PH.D., *Professor of Biblical Literature,*

235 Lawrence st., daily, 2 to 3 P. M.

GENERAL STATEMENT

ORGANIZATION

The Graduate School of Yale University forms a section of the Department of Philosophy and the Arts, which was first formally organized in 1847 for scientific and graduate instruction, but now includes Yale College, the Sheffield Scientific School, the School of the Fine Arts, and the Department of Music.

The degrees of Doctor of Philosophy and Civil Engineer were first offered in 1860, the degree of Dynamical or Mechanical Engineer in 1873, that of Master of Arts (previously given without evidence of study) in 1874, and that of Master of Science in 1897.

The professors in the several sections of the Department of Philosophy and the Arts together constitute the Faculty of the Graduate School. The general oversight of graduate instruction and graduate students is entrusted to the Dean and the Administrative Committee, who may be called upon for information and advice. Students are expected to report to the Dean soon after reaching New Haven.

ADMISSION AND REGISTRATION

Graduates of this and other Colleges and Universities, and (in exceptional cases, by special permission) other persons of liberal education, who are at least eighteen years old, are received as students for longer or shorter periods, with or without reference to the attainment of a degree.

All graduate students who are not regularly enrolled in any other department of the University are required to register their names at the office of the Dean at the beginning of each year of study.

The degree of Doctor of Philosophy, with the courses of the Graduate School leading thereto, is open to candidates without distinction of sex.

INSTRUCTION

Courses of study are offered in the following departments :

PSYCHOLOGY, ETHICS, AND PHILOSOPHY.
ECONOMICS, SOCIAL SCIENCE, HISTORY, AND LAW.
SEMITIC LANGUAGES AND BIBLICAL LITERATURE.
CLASSICAL AND INDO-IRANIAN PHILOLOGY.
MODERN LANGUAGES AND LITERATURES.
NATURAL AND PHYSICAL SCIENCE.
PURE AND APPLIED MATHEMATICS.
THE FINE ARTS.
MUSIC.
PHYSICAL CULTURE.

Instruction is given partly by lectures, partly in recitations and by oral and written discussions, partly by directing courses of reading, and partly by the direction of work in the laboratories and with instruments.

The attention of teachers who desire to fit themselves more thoroughly for a higher grade of professional work is called to the advantages offered by this department for pedagogical instruction and discipline. In addition to the special and advanced study of the subjects in which the graduate student desires instruction, and the pursuit of courses in psychology, ethics, philosophy, and of other courses cognate with pedagogy, opportunity is afforded to observe the actual practice in the class-room, as well as the organization of the different departments of the University and their methods of work.

CLUBS

In various voluntary associations, instructors and students meet together periodically for the reading of papers, oral discussions, etc.; such are :

THE CLASSICAL CLUB.
THE MATHEMATICAL CLUB.
THE POLITICAL SCIENCE CLUB.

THE PHILOSOPHICAL CLUB.
THE SEMITIC AND BIBLICAL CLUB.
THE MODERN LANGUAGE CLUB.
THE ENGLISH CLUB.
THE PHYSICS JOURNAL CLUB.
THE ENGINEERS' CLUB.
THE CHEMICAL CLUB.
THE HISTORICAL CLUB.
THE PHYSICAL CLUB.

FEES AND EXPENSES

The fee for instruction is generally one hundred dollars per year; but it may be more, or less, according to the courses pursued and the amount of instruction received.

A special fee of five dollars is charged to those who use the Gymnasium, and one of two dollars to those admitted to the use of the College Reading-Room.

Board is obtained at prices varying from three and a half to eight dollars a week. The average price is under five dollars.

A list of suitable rooms is kept at the Dean's office.

LIBRARIES AND READING-ROOMS

Students have the free use of all the Libraries of the University. The whole number of volumes in the several libraries of the University is more than 300,000.

THE UNIVERSITY LIBRARY contains about 253,000 volumes, and many thousands of unbound pamphlets. Its READING-ROOM contains the books most important for daily consultation and reference, together with scholarly periodicals. Of current periodical publications, including publications of learned societies, the Library receives an unusually large number,—the foreign serials alone being not less than five hundred.

THE LINONIAN AND BROTHERS LIBRARY contains about 22,000 volumes of the best current literature.

THE COLLEGE READING-ROOM receives fifty-five daily newspapers, American and foreign, nearly sixty weeklies, and seventy-four other periodicals,—in addition to the periodicals received at the University Library. Graduate Students are admitted to the College Reading-Room on payment of an annual fee of two dollars.

THE SHEFFIELD SCIENTIFIC SCHOOL LIBRARY contains 5,000 volumes, largely mathematical.

THE ART SCHOOL LIBRARY contains about 500 volumes of expensive illustrated works.

THE LOWELL MASON LIBRARY contains 4,000 volumes of music.

The Peabody Museum, the Observatory, and the several Laboratories have valuable technical libraries.

Several of the departments of study (the Classical, English, Germanic, Political Science, and Historical) have special libraries of standard works for the use of advanced students.

Dwight Hall, the headquarters of the Young Men's Christian Association, is provided with a good library and a pleasant reading-room, besides the halls used for religious meetings.

A parlor and study-room at 135 Elm street is fitted up for the special use of the women studying in the Graduate School.

LABORATORIES, MUSEUMS, AND COLLECTIONS

The Peabody Museum of Natural History.

The Physical, the Chemical, the Biological, and the Engineering Laboratories, and the Eaton Herbarium, of the Sheffield Scientific School.

The Sloane Physical, the Kent Chemical, and the Psychological Laboratories of Yale College.

The collections of the School of Fine Arts.

The collection of coins in the University Library, and various collections of models, casts, and photographs used in the teaching of mathematics and in other departments of instruction.

LECTURES AND CONCERTS

The following courses of public lectures and concerts are open to the students of the University :

THE SHEFFIELD COURSE.

THE ART COURSE.

THE DIVINITY SCHOOL LECTURE COURSES.

THE AMERICAN LECTURES ON THE HISTORY OF
RELIGIONS.

THE DWIGHT HALL COURSE.

THE PHI BETA KAPPA COURSE.

THE KENT CLUB COURSE.

THE UNIVERSITY CHAMBER CONCERTS.

THE SYMPHONY ORCHESTRA CONCERTS.

THE TROWBRIDGE LECTURES IN THE ART SCHOOL.

DEGREES

THE DEGREE OF DOCTOR OF PHILOSOPHY is conferred upon those students who show the results of resident graduate work by a thesis giving evidence of high attainment and power of investigation, and by an examination on studies whose grade and amount meet the approval of the Faculty. Under ordinary circumstances two or more years' work in residence will be required, but in exceptional cases work of equal grade at another University may take the place of a year's residence here. The thesis must be deposited at the Library for public inspection, not later than May 1. A good knowledge of Latin, German, and French is required in all cases, unless, for some very exceptional reasons, the candidate be excused by the Faculty. Evidence of sufficient attainments in these languages must be furnished the Dean at least two years before the degree is given. The fee for instruction is one hundred dollars per year. The fee for graduation is ten dollars.

THE DEGREE OF MASTER OF ARTS is conferred on Bachelors of Arts of Yale College (and upon Bachelors of Arts

of other colleges who have pursued a course of study equivalent to that pursued in Yale College) of two years' standing or upwards, who have given to the College Faculty evidence of having made satisfactory progress in liberal studies after receiving their first degree. Such evidence may be furnished by one year's systematic study (not professional) in New Haven, under the direction of the College Faculty, followed by an examination. Graduates of other colleges can obtain the degree only by residence as thus described. The charge for instruction will usually be one hundred dollars per year, with a fee of ten dollars for the degree.

Such Bachelors of Arts of *Yale College* as may not choose to reside at the College for study may at any time not less than three years after graduation, show, in either of the two following ways, that they have spent a year in liberal (and non-professional) study, and are worthy of recommendation for this degree. (1) Such candidates may apply to the Faculty for the designation of a course of study, on which an examination shall be taken. This application must be accompanied by a fee of twenty-five dollars. (2) Or a candidate may submit as evidence of his fitness for this degree a printed essay, for the examination of which a fee of twenty-five dollars (to be paid in advance) is required. An additional fee of ten dollars will be charged in all cases for the degree.

A committee of the Faculty is appointed (consisting for the present year of Professors Wheeler and Phillips), to whom candidates for this degree must submit their proposed courses of study for approval by the first of November in each year; and the evidence of a year's study must be submitted to the same committee by June 1.

THE DEGREE OF MASTER OF SCIENCE is conferred on graduates of this or other universities, of two years' standing or upwards, who have taken their first degree in science and who pursue successfully a higher course of

study in science under the direction of the Governing Board of the Sheffield Scientific School. Such a course involves at least one year of resident graduate study, followed by an examination and presentation of a satisfactory thesis in some department of science. A committee of the Faculty is appointed, to whom candidates for this degree must submit their proposed courses of study for approval before the end of October of each year.

THE DEGREES OF CIVIL ENGINEER AND MECHANICAL ENGINEER are conferred on Bachelors of Philosophy who have taken the first degree in Engineering study, and who pursue a higher course under the direction of the Governing Board of the Sheffield Scientific School for at least two years, sustaining a final examination, and giving evidence of their ability to design important constructions and to make the requisite drawings and calculations. The fee for graduation is five dollars.

FELLOWSHIPS

FIVE FELLOWSHIPS yielding four hundred dollars each, not exempting the holders from charges of tuition, have been created by the Corporation out of the income of University funds. These fellowships are open to graduates of all colleges, but preference is given to those who have already spent at least one year in graduate study, and have shown capacity for original work.

The Class of '90 Fellowship, yielding one hundred and fifty dollars, is awarded to a student who has shown ability to do research work.

The Yale Alumni Association of California offers a Fellowship of three hundred dollars to a graduate of one of the California Universities, pursuing studies at Yale in the Graduate School. The incumbent is selected by the Association.

The following Fellowships are, by the terms of the donations, open only to graduates of the Academical Department of Yale University.

THE DOUGLAS FELLOWSHIP.

THE SOLDIERS' MEMORIAL FELLOWSHIP.

THE SILLIMAN FELLOWSHIP.

THE JOHN SLOANE FELLOWSHIP.

THE SCOTT HURTT FELLOWSHIP.

THE ELLEN BATTELL ELDRIDGE FELLOWSHIPS (two).

THE MACY FELLOWSHIP.

THE LARNED FELLOWSHIPS (three).

THE FOOTE FELLOWSHIPS (three).

THE CUYLER FELLOWSHIP.

SCHOLARSHIPS

TWENTY SCHOLARSHIPS, yielding one hundred dollars each, have been created by the Corporation out of the income of University funds. These scholarships are open to graduates of all colleges.

The following Scholarships are open only to graduates of the Academic Department of Yale University.

THE CLARK SCHOLARSHIPS, and

THE W. W. DE FOREST SCHOLARSHIP.

THE DANIEL C. EATON GRADUATE SCHOLARSHIP IN BOTANY is endowed with the income of a fund of two thousand dollars given by Mrs. Eaton in commemoration of her husband, the late Professor Daniel C. Eaton. This scholarship will be open for competition to members of the Senior Classes in the Academic and Scientific departments, on conditions to be prescribed by the Governing Board of the Sheffield Scientific School.

Six scholarships of \$100 each (covering the charges for tuition) are awarded, on application, to those members of the graduating class of the Sheffield Scientific School who have attained high proficiency in the special studies of

their respective courses, and who desire to spend one or more years in graduate study in the School. Each scholarship will be available for one year only. Application for these scholarships must be made in writing on or before June 1st to the head of the department to which the student belongs, with a statement as to the character of the graduate study to be pursued.

Candidates for appointment to Fellowships and Scholarships should send their applications, accompanied by letters of recommendation and other evidence of the excellence of their work already accomplished, to the Dean, Professor Andrew W. Phillips, not later than May 1.

COURSES OF INSTRUCTION

Courses marked with an asterisk (*) are undergraduate courses, but are open to graduate students, provided that these have the consent of the instructor and the approval of the Faculty.

The number of hours stated means, when not otherwise specified, hours of exercise, lectures, or recitations, each week through the year.

The hours named for the exercise are subject to change.

COURSES OF INSTRUCTION

I. PSYCHOLOGY, ETHICS, AND PHILOSOPHY

GEORGE T. LADD, D.D., LL.D.	HENRY S. WILLIAMS, Ph.D.
GEORGE M. DUNCAN, M.A.	E. HERSHEY SNEATH, Ph.D.
EDWARD W. SCRIPTURE, Ph.D.	THOMAS C. STEARNS, Ph.D.
HENRY DAVIES, Ph.D.	GERVASE GREEN, Ph.D.
GEORGE R. MONTGOMERY, B.A.	

Professor LADD :—

1 *Kant Seminary.* 2 hrs.

A thorough study of the *Critique of Pure Reason* and, if time permits, a less thorough study of the *Critique of Practical Reason*. After an expository and critical lecture, a paper upon a topic given out some time in advance is read, to be followed by discussion on the part of both teacher and class.

The effort is constantly made to understand Kant's system of thinking in the light of the history of opinion since his time, and especially of opinion upon the same subjects in the present day.

[Monday, 7.15-9.00 P. M., B₁ O.]

2 *Ethical Seminary.* 2 hrs.

The principal topics in the philosophy of conduct will be studied in detail ; such as the origin and development of moral consciousness, the conceptions of duty, virtue, and the moral law, the nature, ground, and sanction of the right, and the different "Schools" of ethical writers. The method of study combines lectures with papers and discussions by the class, and special research work for those who desire to investigate more thoroughly the literature of the particular subjects.

[Wednesday, 3.15-5.00 P. M., B₁ O.]

*3 *Introduction to Philosophy.* 2 hrs.

This course of lectures is designed to present, in an elementary and summary way, the principal philosophical problems. It may be taken by all whose special studies lie in other departments and as a means of general culture. It is recommended to all who desire to specialize in this department and have not already had its equivalent.

During the latter half of the course special emphasis will be laid upon the philosophy of life and of conduct, in connection with the discussion of problems in Ethics, Aesthetics, and the Philosophy of Religion.

[Wednesday and Saturday, 8.30 A. M., A₁ O.]

*4 *Abnormal Psychology.* 1 hr.

This course of lectures discusses the phenomena of illusions and hallucinations, the physiological changes and mental states in sleep, and in hypnotic, somnambulistic, and other allied conditions. The theory of illusions and hallucinations is discussed in detail.

[Monday, 4.00 P. M., B₁ O.]

Professor DUNCAN :—

5 *Advanced Psychology.* 2 hrs.

This is a course in General Psychology, in which a detailed study is undertaken of the phenomena of mental life from the scientific point of view. James's *Principles of Psychology* is read, with constant reference to Ladd's *Psychology, Descriptive and Explanatory*, Sully's *Human Mind*, and the works of other leading modern authors ; and the reading is accompanied by papers, discussions, and lectures.

[Tuesday, 9.30-11 A. M., B₁ O.]

6 *Epistemology.* 2 hrs.

(a.) The nature and conditions of formal truth are studied in connection with the reading of an advanced work on logic, such as Hobhouse's *Theory of Knowledge*. This is followed by a study of the psychology of knowledge and by an examination of the nature, limits, and grounds for the validity of our knowledge of reality. Professor Ladd's *Philosophy of Knowledge* is read in connection with the latter part of the course.

[To be given, 1901-1902.]

(b.) An historical and critical examination of speculations (more especially from Descartes to the present day) relating to the *philosophy of knowledge*: the history of opinion on the theory of knowledge is traced and the views of the more important thinkers critically examined with a view to the construction of a positive doctrine of knowledge. The course will be conducted in the *seminary* method. Much of the work is research,—the results being presented in papers for discussion.

[Given in 1900-1901 ; Friday, 9.30-11 A. M., B₁ O.]

7 *Metaphysics.* 2 hrs.

The systematic and critical study of the problems of general metaphysics will be undertaken, including an examination of such conceptions as being, space, time, causation, energy, relation, quality, etc. Portions of Lotze's *Metaphysics*, Bowne's *Metaphysics*, Bradley's *Appearance and Reality*, Wundt's *System der Philosophie*, Ladd's *A Theory of Reality*, Royce's *The Four Historical Conceptions of Being* and Ward's *Naturalism and Agnosticism* will be read and discussed; but the exercises will consist principally in the presentation and discussion of elaborate papers embodying the results of research by the class.

[Omitted in 1900-1901.]

8 *The Philosophy of Herbert Spencer.* 2 hrs.

This course is a study of the Evolution Theory of Spencer in its psychological, ethical and metaphysical aspects. Spencer's *First Principles of Philosophy*, *Principles of Psychology* (selections), and *Data of Ethics* are read and discussed.

[Thursday, 9.30-11.00 A. M., B. O.]

*9 *History of Modern Philosophy.* 2 hrs.

An elementary study of the development of speculative thought from Descartes to the present time, with cursory reading of philosophical masterpieces from Descartes to Kant: Descartes' *Method and Principles of Philosophy*, pt. I; Bacon's *Novum Organum*; Spinoza's *Ethics*—selections; Locke's *Essay on Human Understanding*—selections; Leibnitz's *Monadology and Philosophical Opuscles*; Berkeley's *Principles of Human Knowledge*; Hume's *Inquiry concerning Human Understanding*; Reid's *Inquiry into the Human Mind*; Kant's *Prolegomena to any Future Metaphysic*. This course (which is largely a lecture course, with frequent written exercises on the texts read and occasional examinations on both the lectures and texts), while intended primarily for general culture, also aims to be an introduction to the more special study of philosophy in its various branches and problems.

[Omitted in 1900-1901.]

Professor WILLIAMS:—

*10 *The Principles of Evolution.* 2 hrs.

A discussion of the underlying facts, the methods of scientific research, and the philosophical problems upon which the modern philosophy of evolution is founded.

[Wednesday and Saturday, 8.30-9.20 A. M., 5 M.]

Professor SNEATH :—

11 *History of Modern Ethics.* 2 hrs.

A study of the development of ethical thought from Hobbes to the present time. The course will deal primarily with British ethics. However, the development of German ethics from Kant to Schopenhauer will be carefully considered. Lectures and elaborate papers.

[Tuesday, 3-4.30 P. M., A. O.]

12 *Philosophical Scepticism.* 2 hrs.

This course involves an historical and critical examination of scepticism with special reference to the construction of a theory of knowledge. It is divided into three parts as follows :

1. *Historical.* The work in this part of the course includes an examination of the nature of scepticism as revealed in the history of speculative thought. It involves a study of the scepticism of the Sophists; the Earlier and Later Pyrrhonists; the Middle and New Academies; the scepticism of Augustine and Descartes; of Hume and Kant; the positivism of Comte, Mill, and Lewes; the relativism of Hamilton and Mansel; and the agnosticism of Spencer.

2. *Critical.* After considering the significance of scepticism, a careful examination is made into the causes and grounds of scepticism, special attention being given to sensationalism and error.

3. *Constructive.* This part of the course is devoted to a study of the psychology and philosophy of knowledge—to an inquiry into the nature, origin, validity, and extent of knowledge. The work is conducted in the *seminary* method.

[Omitted in 1900-1901.]

13 *Philosophy of Mind.* 1 hr.

Beginning with the facts and laws established by empirical psychology, this course aims at the construction of a metaphysic of mind. The following are some of the subjects to be treated: The concept of mind; the reality, nature, genesis, and destiny of mind; the relations of mind and body; materialistic objections, etc. The course will be based on Ladd's *Philosophy of Mind*.

[Omitted in 1900-1901.]

- *14 *Philosophical Anthropology.* 2 hrs.

This course furnishes an outline study of man, his body and mind in their relations, his relations to nature, to his fellows, and to God.

[Monday and Thursday, 10.30 A. M., A₂ O.]

Dr. SCRIPTURE :—

- *15 *Psychology (Physiological and Experimental).* 2 hrs.

A general course illustrated by physiological and psychological experiments. Text-books : Ladd's *Outlines of Physiological Psychology* ; Scripture's *New Psychology*.

[Tuesday and Thursday, 2 to 4 P. M., Psychological Laboratory.]

- *16 *Psychology (Elementary Laboratory Course).* 2 hrs.

This series of exercises in experimental psychology affords a training similar to that of an elementary course in chemistry or physiology. The course can be taken only in connection with or in sequence to course 15.

[Friday, 4 P. M., Psychological Laboratory.]

- *17 *Psychology of Expression (Gesture, Speech, Music).* 1 hr.

An experimental study of the expression of thought and emotion as shown in facial expression, in gesture, in rhythmic movements, in prose and poetical speech, and in musical rhythm.

[Monday, 3 P. M., Psychological Laboratory.]

- 18 *Experimental Phonetics.* 1 hr.

A series of lectures, laboratory exercises and readings in the application of experimental methods to speech, song, rhythm, verse, etc. Rousselot's *Phonétique expérimentale* and a series of monographs will be read. The general theory of speech and verse as forms of mental expression is given in course 17. The number admitted to the course will be limited ; personal application should be made to the instructor. The student specially interested is advised to take course IV, 53. Opportunities for research will be afforded to a few special students ; see course 21.

[Wednesday, 4 P. M., Psychological Laboratory.]

- 19 *Theory of Statistics and Measurements.* 1 hr.

A study of the theory of probabilities and its application to practical work in the statistics and measurements of mental phe-

nomena. Open only to students having some knowledge of calculus.

[Wednesday, 4 P. M., Psychological Laboratory.]

20 *Psychology (Technical Course).* 1 hr.

This course consists of a series of exercises for those who expect to teach experimental psychology and to manage a laboratory. The instruction covers: the principles involved in making, repairing, and caring for apparatus, with practical training in wood and metal work; the methods of experimental demonstration, with practice in the preparation of lantern slides and the use of lime-light and electric lanterns; the principles of laboratory economy, etc. The workshop practice will be cared for by a special instructor. The student is expected to make several pieces of apparatus involving the use of the lathe and the various small tools. He is urged to become sufficiently familiar with apparatus and lantern-work to give successfully an illustrated lecture; practice lectures will be held and subjected to criticism.

[Wednesday, 5 P. M., Psychological Laboratory.]

21 *Psychology (Research).* 4 hrs.

Only those who have had sufficient experience are permitted to undertake independent investigations. Special arrangements are made for candidates for the degree of Doctor of Philosophy. The results of all investigations belong to the archives of the laboratory. Those who undertake investigations thereby agree to prepare the results for publication, subject to approval, in the *Studies from the Yale Psychological Laboratory*.

Dr. DAVIES :—

22 *Aesthetics.* 1 hr.

The object of this course is to review the history of thought on the subject of the beautiful; to give a philosophical account of the foundations upon which the arts rest; and to study scientific theory of art in its relation to general philosophical system. Bosanquet's *History of Aesthetics*, Rutgers Marshall's *Pain, Pleasure, and Aesthetics*, and other works, will be read in connection with the course.

[Monday, 5 P. M., A. O.]

23 *Philosophy of the Early Christian Fathers.* 2 hrs.

This course of lectures gives a detailed view of the development of Christian thought during the first three cen-

turies. Its object is to trace the philosophical influences which helped to modify Christianity during this period ; to show how Christianity triumphed over heathen philosophy, and how the beginnings of a Christian philosophy were made ; and to estimate critically the value of these early results for modern thought.

[Monday, 2 P. M., A. O.]

[The two following courses may be taken either as studies in philosophy or as studies in Greek. Philological discussions will be introduced into both these courses in so far as such discussions may be necessary to a clear understanding of the thought involved.]

Dr. STEARNS :—

24 *Pre-Socratic Philosophy.* 2 hrs.

The sources and remains of the earliest Greek Philosophy will be critically examined and interpreted with a view to explain the origin and first developments of that line of reflective thinking which has had most influence upon the modern scientific and philosophical ideas and problems.

[Monday and Thursday, 9.30 A. M., A. O.]

25 *Aristotle's Metaphysics.* 2 hrs.

Selected chapters in the Metaphysics will be translated and interpreted. Especial emphasis will be laid upon the new and enduring conceptions which underlie Aristotle's thinking. The effort will be constantly made to understand the philosophical thought of the author, and to illustrate and criticise it by comparison with the now current thought on the same topics.

[Friday, 3.00-4.50, B. O.]

*26 *Plato's Philosophical System.* 2 hrs.

Nearly all the well-authenticated Dialogues will be read and thoroughly discussed, with a view to determining as far as possible Plato's opinions upon the principal philosophical questions. Especial attention will be given to the theory of *Ideas*. Jowett's translation of the Dialogues is used as a text-book.

[Wednesday and Saturday, 9.30 A. M., A. O.]

*27 *Ancient Philosophy.* 2 hrs.

This is an elementary course designed to meet the wants not only of the student who desires, in the way of general culture,

to know something about the scientific thoughts of the Greeks, which have so greatly determined the course of history, but also of the student who wishes an historical basis for his philosophical studies.

[Tuesday and Friday, 10.30 A. M., A. O.]

Dr. GREEN :—

- 28 *History and Theory of Education.* 2 hrs.

This course will comprise readings and lectures on the history and theory of modern education. The bearing of psychology upon methods of teaching and curricula will be considered, followed by a study of the works of the great educational reformers, closing with a critical study of present theory and practice. The course is especially but not exclusively adapted to all who intend to engage in educational work.

[Monday and Thursday, 3 P. M., B. O.]

- 29 *Lotze's Microcosmus.* 2 hrs.

This course will be conducted in such a way as to furnish the student with an opportunity to read this classic work, and at the same time give him practice in philosophical exposition and criticism.

[Friday, 11.30 A. M., to 1 P. M., B. O.]

- *30 *Outlines of General Philosophy.* 2 hrs.

This course will aim to furnish the student with a knowledge of the main problems of general philosophy, and to acquaint him with the various answers which have been given to these problems. Selections from various authors will be read including Paulsen's *Introduction to Philosophy*, Bowne's *Theory of Thought and Knowledge*, Seth's *A Study of Ethical Principles*.

[Monday and Thursday, 11.30 A. M., B. O.]

Mr. MONTGOMERY :—

- 31 *Modern Philosophical German.* 2 hrs.

The class will read in German Eucken's *Geschichte und Kritik der Grundbegriffe der Gegenwart* (2 ed., 1893) for the two-fold purpose of acquiring familiarity with German philosophical language and with recent trends of German thought.

- 32 *French Philosophy in the sixteenth Century.* 2 hrs.

The class will read rapidly in French E. Caro's *Philosophie et Philosophes* both for the sake of the philosophical terminology

and also as a basis for discussions of the French philosophical writings of the day.

THE PHILOSOPHICAL CLUB is designed to afford opportunity both for comparison and discussion of views among all the students in this Department, and also for hearing addresses and papers from distinguished authorities on philosophical subjects, who are not connected with the Department as teachers. The regular meetings of the Club are fortnightly, on Tuesday evening. All graduate students who take courses in philosophy are entitled to membership, on application ; others may be admitted to membership by vote of the existing members.

II. ECONOMICS, SOCIAL SCIENCE, HISTORY AND LAW

PRESIDENT HADLEY, LL.D.	GEORGE P. FISHER, D.D., LL.D.
WILLIAM H. BREWER, Ph.D.	ARTHUR M. WHEELER, LL.D.
WILLIAM G. SUMNER, LL.D.	CHARLES H. SMITH, LL.D.
WILLIAM K. TOWNSEND, D.C.L.	HENRY W. FARNAM, R.P.D.
GEORGE B. ADAMS, Ph.D.	WILLIAM F. BLACKMAN, Ph.D.
EDWARD G. BOURNE, Ph.D.	JOHN C. SCHWAB, Ph.D.
IRVING FISHER, Ph.D.	HENRY C. EMERY, Ph.D.
GEORGE L. FOX, M.A.	EDWIN B. GAGER, B.A.
FREDERICK WELLS WILLIAMS, B.A.	WALTER I. LOWE, Ph.D.
MAURICE H. ROBINSON, M.A.	WILLIAM B. BAILEY, Ph.D.
EDWARD D. COLLINS, Ph.D.	HERBERT E. GREGORY, Ph.D.
ALBERT G. KELLER, Ph.D.	

ECONOMICS AND SOCIAL SCIENCE

Professor SUMNER :—

1 *Anthropology.* 2 hrs.

A careful study of Ranke's *Der Mensch* (2d ed.), with an examination of the separate topics by means of all the appropriate material.

[Monday, 10.30 A. M., and Wednesday, 9.30 A. M.]

2 *The Self-Perpetuation of Society.* 2 hrs.

(Section II of Systematic Societology.) An historical and ethnological study of the evolution of the *Marriage Institution*. *Mores*. Taboo. Idealization. The *Family*. Its forms, parent-hood, kinship, status of woman. Comparative legislation on domestic relations. *Population*. The history, law and policy of population.

[Wednesday and Thursday at 10.30 A. M.]

3 *The Mental Reactions.* 2 hrs.

(Section IVa. of Systematic Societology). An ethnological study of the development of the *Mental Processes* and of the growth and contents of the *Mental Outfit* of the human race in the earlier stages. Ghost-fear, daimonism, otherworldliness, knowledge and pseudo-knowledge, the aleatory element, world-philosophy, *mores*, codes, taboo, therapeutics, etc.

[Omitted in 1900-1901.]

4 *The Beginnings of the Industrial Organization.* 2 hrs.

An ethnological study of the industrial organization from its earliest beginnings. Division of labor between the sexes and the special functions of each ; regulation of industry ; slavery ; formation of capital ; discoveries and inventions ; domestication of animals and plants ; money, etc.

[Omitted in 1900-1901.]

5 *The Industrial Revolution of the Renaissance Period.* 2 hrs.

A chapter in the history of the development of the industrial organization. The industrial element in the Renaissance. The transition from medieval to modern society in its causes, new elements, effects on classes, effects on economic doctrine. Changes imposed on the industrial organization ; world-commerce, land-tenure, handicrafts, banking, and money.

[Omitted in 1900-1901.]

*6 *The Science of Society.* 2 hrs.

An elementary course, with text-book lessons and examinations, in Anthropology and Ethnology, with the origin of civilization and the development of institutions.

In connection with this will be a course of lectures on Systematic Sociology [Societology]. Topics are: The organization of society ; the individual and the social ; social forces ; militarism and industrialism ; property ; marriage, family, and the status of women ; primitive notions in religion and philosophy ; civil government, law and rights ; slavery and classes ; economic interests and their collisions ; conditions of welfare ; origin of moral standards ; reaction of reason on experience. These topics are treated exclusively in the light of Historical Anthropology and Ethnology.

[Monday and Thursday, 8.30 A. M.]

*6a *The Science of Society.* 2 hrs.

A course with a German text-book (Lippert's *Kulturgeschichte* ; 2 vols., Stuttgart, 1887), for those who are able to read difficult German. The exercises are coincident with those of course 40, including the lectures as above.

[Those who take this course are responsible for providing themselves with the text-book before Sept. 21.]

[Monday and Thursday, 8.30 A. M.]

Professor FARNAM :—

7 *Social Politics.* 2 hrs.

A critical and historical study of legislation designed to better the condition of the weaker members of society, considered in its relations to self-help and voluntary activity. Among the topics specially considered will be pauperism, workingmen's insurance, agrarian and factory legislation, coöperation, professional associations.

8 *The Principles of Public Finance.* 2 hrs.

A systematic survey of the means by which the expenditures of government are met, regard being had both to the economic principles involved and to the fiscal systems of modern states. Leading topics are : the budget, taxation (national and local), public debts, and state banks considered as aids to public credit.

[Omitted in 1900-1901.]

Professors SCHWAB and EMERY :—

*9 *Economics.* 2 hrs.

Lectures by Professor Emery till Easter upon the general problems of production, exchange and consumption of wealth ; for the remainder of the year by Professor Schwab on money and monetary problems.

[Wednesday and Saturday, 11.30 A. M., or 12.30 P. M.]

*10 *United States Industrial History.* 2 hrs.

Lectures by Professor Schwab till Easter upon the industrial development of the United States, on foreign commerce, and on the modern capitalistic organization of industry ; for the remainder of the year by Professor Emery upon speculation and modern business methods.

[Wednesday and Saturday, 11.30 A. M.]

Professor SCHWAB :—

*11 *Finance.* 2 hrs.

Lectures upon money, banking and finance, with a view, especially, to the monetary and financial history of the United States.

: [Monday and Thursday, 11.30 A. M.]

***12 *Finance.* 1 hr.**

Lectures on the recent financial history of the United States.

Individual research: The preparation of exhaustive papers upon selected topics in the theory of money and banking.

[Tuesday, 12.30 P. M.]

***13 *United States Public Finance.* 1 hr.**

Lectures upon selected topics in the science of public revenue and expenditure, with special reference to American fiscal problems: protective and revenue tariffs; the National debt; the National tax system; State and local taxation; the taxation of corporations.

Individual research: the preparation of exhaustive papers upon some topic within the field indicated.

[Friday, 12.30 P. M.]

14 *The Financial and Industrial History of the South, 1861-5.* 1 hr.

Lectures upon selected topics in the field indicated.

[Tuesday, 10.30 A. M.]

Professor EMERY :—

15 *Commercial Policy.* 1 hr.

A study of the growth of international trade and recent commercial policy. A reading knowledge of either German or French is necessary; and a knowledge of both languages is desirable. The work of the course consists chiefly in the preparation of papers.

[Friday, 8.30 A. M.]

***16 *History of Economic Theory.* 2 hrs.**

Lectures and class room discussion of the writings of the leading economists. Special emphasis is laid on the relation between economic history and the development of economic theory.

[Monday and Thursday, 12.30 P. M.]

Professor IRVING FISHER :—

17 *Mathematical Economics.* 1st term.

It is as yet uncertain whether this course will be given in 1900 or deferred till 1901.

Professor BLACKMAN :—

- 18 *Social Philosophy.* 2 hrs. 1st term.

The principal sociological writers are classified in "schools" and their points of view and methods are compared and contrasted: *a.* contractual (Rousseau); *b.* positivist (Comte); *c.* evolutionary (Herbert Spencer, Drummond); *d.* biological (Schäffle, Worms); *e.* psychological (Tarde, Durkheim, Le Bon, Simmel, Giddings, Baldwin, Izoulet); *f.* group-wise, observational, statistical (Gumplowicz, LePlay, Quetelet).

[Wednesday and Saturday, 8.30 A. M.]

- 19 *Practical Sociology.* 2 hrs. 2d term.

This course includes the following topics: the four fundamental and perduring social institutions, family, church, state, and property; anarchism, individualism, socialism, communism; the negro; the immigrant; the city; the wage and factory system; and the defective, dependent, vicious and criminal classes (charities and correction). The lectures are supplemented by reports and book-reviews by the students. A visit of two or three days to the charity and correctional institutions of New York, for which careful preparation is made in advance and which furnishes topics and illustrations for subsequent discussion in the class-room, will probably be made, as heretofore.

[Wednesday and Saturday, 8.30 A. M.]

- 20 *Anarchism, Socialism and Communism.* 1 hr.

This course is a study of definitions, historical developments, principles and programs. Books, pamphlets, manifestoes and party platforms are read, as far as possible in the original languages, and reported upon for discussion before the class.

[Wednesday, 11.30 A. M.]

- 21 *A Sociological Study of the Family.* 1 hr. 2d term.

Its biological and psychological bases; its history; matriarchy and patriarchy; polyandry, polygyny, monogamy; heredity, physical and social; prostitution, and divorce; the moral and social significance of the family.

[Tuesday, 8.30 A. M.]

- 22 *The Social Teaching and Influence of Christianity.* 1 hr.

Selected portions of the following works will be studied and discussed: Friedländer's *Sittengeschichte Roms*, Sienkiewicz's

Quo Vadis, Mathews's *Social Teaching of Jesus*, Schmidt's *Social Results of Early Christianity*, Uhlhorn's *Conflict of Christianity with Heathenism* and *Die Christliche Liebesthätigkeit*, Nash's *Genesis of the Social Conscience*, Lecky's *History of European Morals*, Dennis's *Christian Missions and Social Progress*, Blackman's *Making of Hawaii*.

[Thursday, 8.30]

23 *Ethical and Social Ideals in modern English Poetry.* 1 hr. 1st term.

[Tuesday, 8.30 A. M.]

Dr. BAILEY :—

*24 *Statistics.* 2 hrs.

The sources and reliability of statistical data are discussed, and the methods of distinguishing true and false inferences are pointed out. Index numbers are studied, and the lectures treat of statistics of population, crime, suicide, property, etc. The attempt is made to determine the laws which govern the group actions of men.

[Tuesday and Friday, 11.30 A. M. or 12.30 P. M.]

*25 *American Social Conditions.* 2 hrs.

A critical study of the principal phenomena that are characteristic of American society. The problems connected with the negro, concentration of population in cities with the attendant dangers, immigration, poor relief, labor organizations, liquor question, etc., will be presented in lectures.

[Wednesday, 10.30 and Saturday, 9.30 A. M.]

26 *The Economic Systems of Classical Antiquity.* 1 hr.

A critical study is made of the political and social institutions of Greece and Rome. The lectures treat of the income and expenditure of the state, the currency, credit instruments, poor relief, slavery, land tenure, commerce, trade regulations, marriage institutions, etc.

[Tuesday, 9.30 A. M.]

Drs. GREGORY and KELLER :—

*27 *Environmental Influences on Man.* 1 hr.

First term (Dr. Gregory) : the relation of man to nature ; a study of the topography, climate, distribution and character of fauna,

flora, building material, etc., as factors which influence man's physical development and manner of life.

Second term (Dr. Keller): Social environment, including the interrelation of primitive and early societies, and of unequally advanced civilizations. It is intended especially to make an economic and social study of the contact of civilized with uncivilized races, as illustrated in the history of colonial administration, particularly of that attempted in the East Indies. A reading knowledge of German and French is required.

[Monday, 3 P. M.]

Dr. KELLER :—

- *28 *Homeric Social Life.* 1 hr.

A systematic study of Homeric social life from the documentary evidence of the Iliad and Odyssey. National environment, industrial organization, religion, property, marriage, government and classes will be investigated in the light of sociology and culture-history. A reading knowledge of German or French is desirable.

[Friday, 3 P. M.]

Mr. ROBINSON :—

- *29 *Industrial Combinations.* 1 hr.

A study of the modern tendency toward the concentration of industry ; the relation of aggregated capital to investors, wage-earners, competitors and consumers ; and the various plans for regulating and controlling capitalistic monopolies.

Individual research : the preparation of critical papers upon the development of some characteristic combination.

[Wednesday, 9.30 A. M.]

- *30 *Comparative Politics.* 2 or 3 hrs.

Lectures upon the nation, the state and government. A comparative study of some of the leading constitutional states, England, France, Germany, Switzerland, etc.

Individual research : an exhaustive study of some topic in comparative government based upon all the available sources.

[Tuesday and Friday, 3 P. M.]

Mr. E. B. GAGER and Professor W. K. TOWNSEND :—

- *31 *Law.* 2 hrs.

An historical and philosophical view of the Law in its great outlines, as common to all nations, and particularly as developed

in the Anglo-Saxon race. Also, lectures upon American Constitutional Law and upon International Law. Text-books are read in connection with the lectures. The course is intended for those who may be interested in the subjects as a branch of general education.

[Friday and Saturday, 12.30 P. M.]

Mr. Fox:—

32 *Comparative Municipal Government.* 1 hr.

The subject is treated from a practical rather than an historical point of view, and has a close relation to the future work of the student as a citizen. Some of the subjects considered are the sphere and functions of city government, existing and proposed; organization and methods of administration; relation to the higher legislature; special charters and general municipal laws; sources of revenue and methods of expenditure. The leading types of American city government are described, together with a survey of European cities. Original reports upon city charters are required, and occasional debates may be held on questions of municipal policy.

[Tuesday, 4 P. M.]

HISTORY

Professor BREWER:—

33 *Physical Geography in its relation to History.* 1 hr. 2nd half of 2d term.

A course of about ten lectures discussing the following topics: the relations of man to the region he inhabits; physical geography as related to the development of civilization; natural aids to the defence and protection of communities; natural facilities for commerce; the effect of these several factors on the history of nations; and the modification of these natural conditions by modern science and invention.

[Thursday, 10.30 A. M.]

Professor WHEELER:—

34 *History of Treaties, 1763-1815.* 1 hr.
[Wednesday, 5 P. M.]

*35 *History of Europe since 1789.* 2 hrs.
[See Course 52, page 71.]

- 36 *Investigation of special topics in European History
from 1789 to 1815.* 1 hr.

A general knowledge of the period, and ability to read French or German easily, are required.

[Not given in 1900-1901.]

- 37 *Constitutional History of England since 1760.* 1 hr.
[Thursday, 5 P. M.]

Professor C. H. SMITH :—

- *38 *American History (Constitutional).* 2 hrs.

An historical study of the Federal Constitution, mainly of the Articles relating to the General Government in its three departments, Legislative, Executive, and Judicial.

[Monday and Thursday, 9.30-11.30.]

- *39 *American History (Recent).* 2 hrs.

Political and Constitutional History of the United States from the beginning of the Civil War to the present time. In its political features this is a continuation of the National course (Professor Bourne's) in Junior year. In its constitutional features, dealing mainly with the states in their federal relations, it is a continuation of course 34.

[Tuesday and Friday, 8.30-10.30.]

- 40 *American State Constitutions.* 1 hr.

An historical study of the State Constitutions in their origin and development.

[Tuesday, 10.30, D. O.]

Professor PERRIN :—

- *41 *Outline Survey of Ancient History.* 1 hr.

Lectures, based on manual study, outlining and emphasizing such general features of ancient history as are most valuable for the intelligent prosecution of mediæval history.

[Wednesday, 9.30 A. M., 15 Phelps Hall.]

Professor ADAMS :—

- *42 *Mediæval History.* 2 hrs.

The object of the course is to furnish an outline of the general history of Europe, and to follow the development of political,

intellectual, and religious civilization through the period which lies between ancient and modern history.

43 *Medieval Institutions.* 2 hrs.

This course extends through two years, and considers the most important European institutions between the fall of Rome and the sixteenth century. The student is made acquainted with the literature of the subjects treated and with the collections of original material. He is expected to investigate selected topics in the sources and to report to the class upon them, and especial attention is paid to the principles of criticism and to methods of research.

a. The first year's course covers early German institutions; their modification under Roman influence; the development of the papal power and its special institutions; the institutions of Charlemagne's empire; the origin and the final forms of feudalism; and the beginnings of national governments.

[Course a is not given in 1900-1901.]

b. In the second year's course especial attention is given to the study of the institutions of the Norman and early Angevin periods in England and to a comparison of them with contemporary French institutions.

Professors ADAMS and BOURNE:—

44 *Methods of Historical Research and Criticism.* 1 hr.

The first half of this course consists of lectures and discussions on the principles of historical criticism, for which Langlois and Seignobos' *Introduction to the Study of History* will serve as an outline. A few typical problems of internal and external criticism will be examined by the class and thoroughly analysed. The second half, conducted by Professor Adams, consists of practical exercises in the study of selected historical documents, so arranged as to furnish examples of all the important points of method. The weekly exercises in this course may occupy two hours.

[Monday, 3 P. M.]

Professor BOURNE:—

*45 *American History (Colonial).* 2 hrs.

This course will deal with the history of the American Colonies from the beginning of the discoveries until the end of the

American Revolution. The nature and objects of colonies, the character and aims of the colonists, the political and social development of the colonial communities, and the causes of the Revolution will be the leading topics. The work of the course is based on Hart's *American History told by Contemporaries*, vols. i and ii.

[Tuesday and Friday, 9.30.]

- *46 *American History (National)*. 2 hrs.

The Political History of the United States from the Revolution to the Civil War. The formation of the Union, the rise and growth of parties, the development of democracy, the influence of the westward expansion and of slavery on political life, and the origin and significance of the more important economic questions will be discussed. Lectures, outside reading and bibliographical practice.

[Monday and Thursday, 9.30-11.30.]

- 47 *European Colonies in America*. 2 hrs.

A comparative study of the colonization of the New World. This course begins with a brief review of medieval commerce and of the impulses promoting the voyages of discovery. This is followed by a more detailed study of representative colonies. The Spanish, French, and English colonies are compared with each other and with their respective mother countries. Particular attention is given to the various forms of colonial administration and to the early steps toward Union. In the latter part of the course the causes of the American Revolution and the downfall of the old colonial system are examined.

[Omitted in 1900-1901.]

- 48 *Sources and Literature of American History*. 1 hr. 2d term.

Informal lectures, with reports and criticisms by the class.

[Omitted in 1900-1901.]

- 49 *Modern European and English Historiography*.

1 hr. 2d term.

History of modern historical literature and investigation from the middle of the eighteenth century. After a brief review of the general condition of historical studies in the last century, the modern development of historical study in Germany, France, and England is examined and its progress followed in the representative works of historical scholarship down to our own time.

50 *Diplomatic History of the United States.* 2 hrs. both terms.

History of the foreign relations of the United States from the beginning of the Revolution to the close of the Civil War. Special attention is given to the relations with Spanish America and to the annexations of territory. A reading knowledge of Spanish is very helpful for the prosecution of this course.
[Tuesday and Thursday, 3 P. M.]

Professor ADAMS (first half-year) and Assistant Professor RICHARDSON (second half-year) :—

*51 *English History.* 3 hrs.

Political and constitutional. Particular attention will be given to the development of political and legal institutions, and in the second half to the colonial expansion of England. The more important constitutional documents will be discussed in detail as well as such other contemporary sources as are accessible. While this course is of special value to those who intend to study law, the interest of the general student will also be kept in view.

I, Monday, Wednesday, and Thursday, 10.30 A. M. } C Alumni
II, Tuesday, Wednesday, and Friday, 9.30 A. M. } Hall.

Assistant Professor RICHARDSON :—

52 *English History from the accession of the Tudors to the reign of William and Mary.* 2 hrs.

A research course which extends through two years and lays more stress upon the constitutional than upon the political side of the subject. Construction of bibliographies, and reports based upon independent investigation of the sources, form an important part of the work.

a. The course for the first year embraces the period between 1485 and 1603. The reigns of Henry VII., Edward VI., and Mary are treated with comparative brevity in lectures, with assigned readings from primary and secondary sources, while particular attention is paid to constitutional developments under Henry VIII. and Elizabeth. [Course *a* is given in 1900-1901.]

b. The course for the second year embraces the period between 1603 and 1688. The constitutional history of the Puritan Revolution will receive especial consideration. The work consists in large part of a systematic study of the documents contained in Prothero's *Statutes and Constitutional Documents*, and Gardiner's *Constitutional Documents of the Puritan Revolution*. [Course *b* is not given in 1900-1901.]

- 53 *Studies in the History of Brandenburg-Prussia.* 1 hr.

Considerable attention will be given to economic and constitutional developments in the days of the Great Elector, Frederic William I. and Frederic the Great. Documents contained in Schilling's *Quellenbuch zur Geschichte der Neuzeit* will be read and discussed. For the study of the constitution, the basis will be furnished by Altmann's *Ausgewählte Urkunden zur Brandenburgisch-Preussischen Verfassungs- und Verwaltungsgeschichte*. Various phases in the life and intellectual development of Frederic the Great will also be studied.

- *54 *History of Northern Europe from the Reformation to the death of Frederic the Great.* 2 hrs.

This course will deal chiefly with the following topics: the Reformation in Germany and the states of Northern Europe; the Revolt of the Netherlands, with a brief sketch of the decline of Spanish power; the Counter-Reformation; the Thirty Years' War, with especial reference to its effect upon the institutions of the Empire and the subsequent policy of the foremost German states; Sweden as a Great Power, its rise, progress and decline; the Northern War; Russia, with especial reference to the reigns of Peter the Great and Catherine II., to the partition of Poland and the Turkish question; and the history of Brandenburg-Prussia.

During the first half of the course the centre of interest will be found in the religious and political rivalries of the era of the Reformation; in the latter half, in the history of Brandenburg-Prussia from the time of its rapid economic, political and military development under the Great Elector and Frederic William I. to its acquisition of world-power under Frederick the Great in contest with Austria and France.

Considerable attention will be given to the history of the Prussian constitution and to topics of economic interest, such as the decline of the Hansoatic League, the economic results of the Thirty Years' War, and the development of the resources of Brandenburg-Prussia by its greatest rulers.

Lectures and collateral reading.

Monday and Thursday, 12.30, C Alumni Hall.

[This course alternates with course *55.]

- *55 *History of France from the Reformation to the French Revolution.* 2 hrs.

This course will deal not only with the internal history of France, but also with its relations to the larger problems of

modern European history—the progress of the Reformation and the Counter-Reformation, the formation and development of the modern European state-system, colonial expansion, the great wars and treaties of the modern epoch, and the growth of political and economic science.

In the internal history of France, especial attention will be paid to the character and development of political and social institutions; the era of the Civil Wars, with their religious and dynastic rivalries; Henry IV. and Sully; Richelieu and Mazarin; the age of Louis XIV. and its representative ideas; and the political and intellectual movements preparatory to the Revolutionary epoch.

Lectures and collateral reading.

Monday and Thursday, 12.30. C Alumni Hall.

[This course is omitted in 1900-1901. It alternates with course *54.]

Dr. W. I. LOWE :—

56 *English Constitutional History (1295-1485).*

2 hrs., 2d term.

From the Model Parliament and the Confirmation of the Charters to the Establishment of the Tudor Despotism.

This is an investigation course, beginning with a general survey of the Constitution under Edward I, and ending with the Reign of Richard III. A knowledge of the political history of the period and the ability to use original sources are essential prerequisites for this course.

Mr. F. W. WILLIAMS :—

*57 *Ancient Oriental Nations from the earliest times.* 2 hrs.

A comprehensive survey of the beginnings of civilization, and its development in the principal nations of antiquity, including Babylonia, Assyria, Egypt, Phoenicia, and Media. This course illustrates the connection of Biblical and profane history, discusses the origins of political and social institutions, religions, the arts and sciences, and the Asiatic sources of European civilization, and constitutes an introduction to the study of history.

[Monday and Thursday, 12.30, C₁ O.]

*58 *Modern Asiatic History.* 2 hrs.

A course embracing successively the regions of India, Japan, China, and Central Asia, with particular regard to their history since the 17th century, their governments, and their relations

with European powers. The culture, faiths, and sociology of existing nations in the Far East are here considered with a view of interesting those whose historical knowledge is confined to the Western world. The course is designed to stimulate further reading by students in special topics suggested by the instructor, upon which written essays will be presented and discussed. It also offers an opportunity for those who contemplate missionary careers to acquaint themselves with the political and social condition of the more important foreign missionary fields.

[Tuesday and Wednesday, 12.30, C₁ O.]

59 *Medieval Asia and the Mohammedan Conquest.* 2 hrs.

An attempt to supplement the history of Medieval Europe by following the events in Western Asia during the period between Alexander's death and the capture of Constantinople, 1453. The course exhibits the gradual effacement of Hellenic influences in Asia, the continual contest between Rome and the East, and the secular antagonism between Oriental and Occidental civilization. It takes up in succession the Parthian and Sassanid Empires, follows the rise of Islam and its extension under the Saracens and Turks, and shows the influences of Asiatic culture upon modern Europe.

[Monday and Thursday, 11.30 A. M., C₁ O.]

Professor GEORGE P. FISHER:—

60 *General Church History.* 3 hrs.

This course comprises the following topics: The nature, divisions, and sources of Church History, with a review of the literature on the subject; the old or preparatory dispensation in its relation to Christianity; the condition of the Graeco-Roman world at the introduction of the Gospel; the establishment of Christianity, and the conflicts of the apostolic age; the spread of Christianity, including especially the conversion of the Roman Empire and of the Teutonic nations; the changes in ecclesiastical polity in the early centuries; the organization of Latin Christianity under the Papacy; the relations of the Papacy and the Church to civil society in the Middle Ages; the Protestant Reformation, with its causes and the systems of polity adopted by the different Protestant churches; Christian life, and its characteristic features in the successive eras, including the rise and subsequent history of monasticism; the history of Christian worship.

[Monday, Thursday, and Saturday, 10 A. M.]

For Outline Survey of Ancient History see course IV, 2.

THE POLITICAL SCIENCE CLUB meets fortnightly for the reading and discussion of papers, and for reports on current literature. A convenient room in White Hall (No. 11) is set apart for its use, and contains a small departmental library which is accessible to the graduate students at all hours of the day. As the books are not allowed to be taken from the room, this library is particularly helpful to graduate students when they wish to refer to some authority which is temporarily withdrawn from the University library.

THE HISTORICAL SEMINARY ROOM, No. 90 High street, contains a reference library to which graduate students may have access at all hours.

THE HISTORICAL CLUB meets fortnightly for the reading and discussion of papers and for reports on current periodicals.

III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.

EDWARD L. CURTIS, PH.D., D.D. FRANK K. SANDERS, PH.D.
BENJ. W. BACON, LITT.D., D.D. CHARLES C. TORREY, PH.D.
FRANK C. PORTER, PH.D., D.D. WARREN J. MOULTON, B.D., PH.D.

HEBREW

Professor CURTIS :—

- 1 *Elementary Hebrew.* 4 hrs.
The year's work includes a mastery of the elements of Hebrew and the translation of Genesis.
[Tuesday, Wednesday, Friday, Saturday, 11.30 A. M.]
- 2 *The Book of Job.* 1 hr.
The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.
[Omitted in 1900-1901.]
- 3 *Selections from Proverbs, and the Five Megilloth.* 1 hr.
The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.
[Monday, 5 P. M.]
- 4 *Selections from the Psalter.* 2 hrs. 1st term.
The grammatical and historical exegesis of the text, with attention to New Testament interpretation and homiletical application.
[Tuesday and Friday, 10.30 A. M.]
- 5 *The Book of Isaiah.* 2 hrs. 2d term.
The grammatical and historical exegesis of the Hebrew text.
[Wednesday and Saturday, 10.30 A. M.]

Professor SANDERS :—

- 6 *Advanced Hebrew.* 2 hrs.
A course which continues course 9 and carries the student as far as the first year of Hebrew in a theological seminary. It includes a thorough review of the grammar, and the careful reading of the books of Samuel, and of portions of the Minor prophets. In the second term two hours of sight reading will count as one of these hours.
[Tuesday and Friday, 3 P. M.]

7 *Hebrew Syntax.* . 1 hr.

A careful study of the principles of Hebrew Syntax with references to the standard discussions and with some attention to comparative syntax. During the year a critical reading of a variety of passages with especial reference to a syntactical interpretation.

[Omitted in 1900-1901.]

8 *Hebrew Poetical Literature.* 1 hr.

A survey of the entire field of Hebrew poetical literature, with emphasis upon the relation of form to interpretation, accompanied by lectures on Semitic poetry.

[Omitted in 1900-1901.]

Dr. MOULTON :—

9 *Elementary Hebrew.* 2 hrs.

A study of the elements of the Hebrew language in connection with the reading of Genesis i-viii and of selected passages of easy Hebrew.

10 *Textual Criticism of the Old Testament.*

2 hrs. 2nd half-year.

The reading of First Samuel with special reference to the variations of the Greek version of the Old Testament and to its use in Biblical criticism.

OTHER SEMITIC LANGUAGES

Professor TORREY :—

11 *Elementary Arabic.* 2 hrs.

The elements of Arabic grammar, including exercises in writing. Rapid reading of easy prose extracts. The text books used will be Socins' *Grammar* and Brünnow's *Chrestomathy*.

12 *The Qurân.* 2 hrs. 1st half-year.

Reading of selected suras, with a supplementary study of the life of Mohammed.

13 *The Arabic Historians.* 2 hrs. 2nd half-year.

The reading of Ibn Hishâm's account of the battle of Bedr.

- 14 *Arabic Poetry.* 2 hrs.
The reading of selections from Nöldeke's *Delectus Veterum Carminum Arabicorum*.
[Omitted in 1900-1901.]
- 15 *Elementary Assyrian.* 2 hrs.
The aim of the course is to give the student a good introduction to the Assyrian language and literature. Especial attention will be given to practice in reading both cuneiform and transliterated texts. The text books used will be Lyon's *Assyrian Manual* and Delitzsch's *Lesestücke*, 4th edition (1899).
- 16 *Historical and Mythological Texts.* 2 hrs. 1st half-year.
Rapid reading of selected texts, with supplementary study of Assyro-Babylonian history and literature.
- 17 *Inscriptions Important for the Study of the Old Testament.* 2 hrs. 2nd half-year.
Reading and discussion of the Babylonian accounts of the Creation and the Deluge, and of texts bearing on Old Testament history.
- 18 *Elementary Ethiopic.* 2 hrs. 1st half-year.
The elements of Ethiopic, using Praetorius's *Äthiopische Grammatik* and Bachmann's *Lesestücke*.
- 19 *Advanced Ethiopic.* 2 hrs. 2nd half-year.
Reading of the *History of the Martyrs of Nagrân* (Pereira's edition, 1899).
- *20 *General Introduction to Semitic Philology.* 1 hr.
A general view of the Semitic languages and peoples, including a brief survey of their literatures. No special knowledge of the Semitic languages, beyond an elementary knowledge of Hebrew, is required for this course.

Dr. MOULTON :—

- 21 *Elementary Syriac.* 2 hrs.
The principles of the language, with reading of selections in Brockelmann's *Syrische Grammatik*.
[Omitted in 1900-1901.]

- 22 *Advanced Syriac.* 2 hrs.
A continuation of course 21, reading historical selections.
- 23 *Biblical and Palestinian Aramaic.* 2 hrs. 1st half-year.
A study of Biblical Aramaic, using as a text book Marti's *Aramäische Grammatik*.

BIBLICAL LITERATURE

Professor CURTIS :—

- 24 *Ancient Traditions and History of the Jewish People.* 1 hr.
Studies in history and archaeology with the view of determining the meaning and historical value of the Biblical records.
[Thursday, 8.30 A. M.]
- 25 *Analysis and Exposition of Isaiah, Jeremiah, and Ezekiel.*
(English Bible.) 2 hrs. 2d term.
[Omitted in 1900-1901.]
- 26 *Analysis and Exposition of the Twelve Minor Prophets.*
(English Bible.) 2 hrs. 2d term.
[Tuesday and Friday, 10.30 A. M.]
- 27 *Old Testament Introduction.* 1 hr.
A brief survey of the history of the canon, text, and versions, followed by special introduction to the Hexateuch and remaining Old Testament books. Lectures.
[Thursday, 11.30 A. M.]

Professor PORTER :—

- 28 *Biblical Theology of the Old Testament.* 2 hrs. second half-year.
A history of the religion of Israel from its beginning to the time of Christ. Special attention is given to the work and teachings of the several Prophets, to the significance of the Exile, and to the nature and history of post-exilic Judaism.
[Wednesday and Saturday, 11.30 A. M.]
- 29 *Biblical Theology of the New Testament.* 4 hrs. first half-year. 2 hrs. second half.
The teaching of Jesus is examined in its individuality and in its historical relations and significance. The theology of the

Apostolic age is then studied, with special reference to the sources, character, and influence of the thought of Paul.

[Omitted in 1900-1901.]

- 30 *Biblical Doctrine of the Spirit.* 1 hr.

A *seminar* course for the study of the conception of the Spirit in the Old and New Testaments, with special attention to the nature of prophetic inspiration, the inter-relation of Hebrew and Greek conceptions, and the sources, character and influence of the thought of Paul.

- 31 *Biblico-theological study of Hebrew, James and Revelation.* 1 hr.

A *seminar* course, with special reference to the relation of the thought of these books to the teachings of Christ and Paul, and to Jewish thought. The course includes some readings, for comparison, from Jewish (Palestinian and Hellenistic) books, and from early post-canonical Christian literature.

- 32 *Biblical Doctrine of Revelation.* 1½ hrs.

A *seminar* course for the study of the conception of Revelation in the Old and New Testaments, its forms and conditions, and the nature of its authority.

Professor BACON :—

- 33 *Prolegomena to the New Testament.* 1 hr.

Lectures on philological and historical apparatus for New Testament exegesis, textual criticism, and history of the New Testament canon.

[Saturday, 8.30 A. M.]

- 34 *The Pauline Epistles.* 3 hrs. 1st term.

Grammatico-historical exegesis of Galatians and Ephesians with comparison of the Pauline system.

[Tuesday, Thursday, Friday, 8.30 A. M.]

- 35 *The Gospel of Mark.* 3 hrs. 2d term.

Historico-critical exegesis of the Gospel of Mark, with comparison of the synoptic tradition.

[Tuesday, Thursday, Friday, 8.30 A. M.]

- 36 *The History of New Testament Literature.* 2 hrs.

Mondays, critical readings of the Book of Acts with application of the principles of historical and documentary criticism.

Thursdays, lectures on special introduction to the several New Testament books.

[Monday, Wednesday, 8.30 A. M.]

37 *Sources and Text of the Lucan Writings.* 2 hrs.

A critical investigation of the literary sources of the Gospel of Luke and Book of Acts. *Seminar method.*

[Thursday, 4-6 P. M.]

38 *Sight-Reading of the New Testament.* 2 hrs.

Translation and condensed comment on books not read in the course. Open to all students in the University.

[Tuesday, 4-6 P. M.]

Professor SANDERS :—

39 *Biblical Literature (Pre-exilic).* 2 hrs.

A constructive survey of the Old Testament as history and literature to the Babylonian exile, 586 B. C., each book being considered, as far as possible, in its appropriate chronological connection. The history of the Hebrew people is treated both as an integral part of Western Asiatic history and as a history of religious development. The course aims to promote (1) a thorough but general familiarity with the contents of the English Old Testament, (2) a realization of the significance of Hebrew history, (3) an appreciation of the Bible as a noble literature, and (4) an intelligent attitude towards many problems raised by Biblical criticism. Nearly two-thirds of the Old Testament is covered in the course of the year.

[Wednesday and Saturday, 9.30 A. M.]

40 *Biblical Literature (Post-exilic).* 2 hrs.

A survey of Biblical history and literature from the period of the exile, 586 B. C., to the close of the first Christian century, including the books of the Old Testament not considered in course 38, some apocryphal literature and the whole of the New Testament. This course is complete in itself, while, with course 38, it covers the whole Bible, and the whole range of Asiatic history down to the Roman domination, as far as it relates to Biblical history.

Students in both courses have access to a carefully selected reference library and to much illustrative material.

[Tuesday and Friday, 10.30 A. M.]

- 41 *English Bible Seminary.* 2 hrs.

An investigation course, intended to train men for patient and accurate investigation of Biblical questions.

The course is very informal, the class meeting at regular intervals to report and compare results of individual study of themes assigned by the instructor.

[Wednesday, 2-4 P. M.]

- 42 *Israelitish Institutions.* 1 hr.

A study of the growth of the Israelitish people as a nation, from the institutional point of view, tracing the origin, history and final form of social, political and religious usages, and determining their significance. Course 39, or a fairly good general knowledge of the Old Testament, is presupposed for all who elect this course.

- 43 *Prophetic Literature of the Old Testament.* 1 hr.

The rapid but thorough study of the prophetic literature of the Old Testament, chronologically arranged, stress being laid upon the distinctive message of each prophet for his own age, on the contribution of each to constructive religious thought and on the gradual attainment of permanent religious ideas and ideals.

[Omitted 1900-1901.]

Dr. MOULTON :—

- 44 *Studies in the Gospels.* 1 hr.

A survey of the characteristics of the gospels which throw light on their origin and interpretation, followed by a study of their distinctive contents, especially the parables of Jesus.

- 45 *The Pauline Epistles.* 1 hr.

A detailed study of the principal epistles of Paul taken in the probable order of writing.

[Omitted in 1900-1901.]

- 46 *Maccabean History and Literature.* 1 hr.

A survey of the history and literature of the period from the death of Alexander the Great, 323 B. C., to the conquest of Palestine by Pompey, 63 B. C.

[Omitted in 1900-1901.]

- 47 *Reading of Theological German.* 1 hr.

Reading of Jülicher's *Die Gleichnisreden Jesu*, I Thl.

[Monday, 2 P. M.]

Dr. WOŁODARSKY :—

48 *Readings in Post-Biblical Jewish Literature.* 2 hrs.

A sight reading course in Rabbinic and Talmudic literature with discussions of the later Jewish interpretation of Hebrew law.

Students in this course must have gained a working knowledge of Hebrew and Aramaic.

49 *Modern Hebrew Literature.* 1 hr.

The class will read some standard historical novel by a modern writer, affording excellent practice in the reading of Hebrew and an insight into Jewish life and ideas.

Only a good elementary knowledge of Hebrew is necessary in this course.

For courses in Hellenistic Greek, compare the announcement of the Department of Classical Philology.

THE SEMITIC AND BIBLICAL CLUB, composed of the instructors, the students who are studying for a degree, and others who are interested in the work, holds stated semi-monthly meetings, at which papers on subjects of interest to Biblical students are presented and discussed.

IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY

TRACY PECK, M.A.	HENRY P. WRIGHT, Ph.D., LL.D.
BERNADOTTE PERRIN, Ph.D., LL.D.	THOMAS D. SEYMOUR, LL.D.
EDWARD P. MORRIS, M.A.	HENRY R. LANG, Ph.D.
THOMAS D. GOODSELL, Ph.D.	E. WASHBURN HOPKINS, Ph.D.
HORATIO M. REYNOLDS, M.A.	HANNS OERTEL, Ph.D.
JAMES W. D. INGERSOLL, Ph.D.	ARTHUR L. WHEELER, Ph.D.
T. WOOLSEY HEERMANCE, Ph.D.	CHARLES U. CLARKE, B.A.
SHERWOOD O. DICKERMAN, B.A.	

Professor PERRIN :—

1st half year.

1 *Classical Seminary.*

2 hrs.

Herodotus iv–ix, and the tradition of the history of the Persian Wars through Herodotus and Thucydides to Plutarch. Studies in historical source-criticism.

Apparatus required : (1) Standard texts of Herodotus, Thucydides, Diodorus Siculus, and Plutarch ; (2) Busolt, *Griechische Geschichte*, Bd. ii. Gotha, 1895 ; (3) Hauvette, *Hérodote*, Paris, 1894 ; (4) Wachsmuth, *Einleitung in das Studium der alten Geschichte*, Leipzig, 1895 ; (5) Bauer, *Plutarch's Themistokles*, Leipzig, 1884, and *Themistokles*, Merseburg, 1881.

All other apparatus is supplied by the University and Department libraries,—such as the fragments of the Greek historians, and the pertinent Greek inscriptions.

Students admitted to this course are expected to read French and German freely, and it is for their advantage to have read beforehand Herodotus, and Plutarch's *Aristides* and *Themistocles*.

Professor PECK :—

2d half year.

Critical and exegetical studies in the Epistles of Horace.

[Saturday, 9.30–11.30 A. M., Phelps Hall.]

GREEK.

Professor SEYMOUR :—

3 *Epic Poetry.*

3 hrs.

Introduction to the critical study of Homer. Lectures on the history of Homeric study, Epic poetry, the composition and transmission of the poems, life in the Homeric times in its various aspects : Homeric language and verse. Followed by a

familiar but critical interpretation (and exercises in interpretation and criticism) of portions of the *Odyssey*, and of the later Greek epics.

[Monday and Thursday, 8.30 to 10 A. M., 23 Phelps Hall.]

4 *Pindar and Bacchylides.* 2 hrs.

The odes of Pindar and Bacchylides are studied with specially qualified students, with exercises in the critical treatment and interpretation of the text, as a Greek *seminary* course.

[Omitted in 1900-1901.]

5 *The Greek Orators.* 3 hrs.

A study of Greek Oratory, beginning with the orations of Isaeus, and including some of the private orations of Demosthenes, with reference to Athenian life and law, as well as to the development of Attic eloquence.

[Tuesday and Friday, 8.30 to 10 A. M.]

6 *Aeschylus.* 3 hrs.

The extant plays of Aeschylus are read. The instructor interprets the *Prometheus* and parts of other plays. The members of the class later interpret in turn.

[Omitted in 1900-1901.]

7 *Plato.* 3 hrs.

The *Republic*, and the portions of the other dialogues which are most important for its elucidation.

[Omitted in 1900-1901.]

8 *History and Encyclopaedia of Greek Studies.*

1 hr. 1st half year.

Fifteen familiar lectures, with special attention to bibliography.

[Omitted in 1900-1901.]

*9 *Plato and Aristotle.* 2 hrs.

(a) The *Phaedo* of Plato, with an introduction to the literary and philosophical study of this author.

(b) The *Nicomachean Ethics* of Aristotle, Books i-iv and x, with a study of Aristotle's methods of research and statement.

[Monday and Thursday, 3 P. M.]

Professor GOODELL :—

10 *Sophocles.* 3 hrs.

Reading of the seven extant plays with special attention to the artistic form, including style, treatment of myths, management

of the action, use of meters, and the like. A brief introduction to Greek rhythmic and metric will be given by lectures.

[Monday, Wednesday, and Friday, 10.30 A. M., 15 Phelps Hall.]

Professor REYNOLDS.

11 *Aristotle's Poetics. Literary Criticism in Ancient Times.*

1 hr.

Interpretation of the *Poetics* and parts of the *Rhetoric*, with selections from Plutarch, Pseudo-Longinus, and Lucian.

[Omitted in 1900-1901.]

12 *Late Greek Poetry.*

1 hr.

This course includes a survey of Alexandrian and later Greek poetry. Reading of the mimes of Herondas, with selections from the Anthology, and from the hymns of Callimachus, and other fugitive poetry.

[Omitted in 1900-1901.]

*13 *Homer.*

2 hrs.

Reading of the entire *Odyssey*. This course is intended for the general student of literature.

(See course 3, above.)

*14 *Euripides.*

2 hrs.

A reading-course with reference to Euripides's poetic and dramatic quality. Five or six plays will be read. Discussion of the poet's relation to his own times, style, metres, dramatic innovations, and influence on the Roman and the modern dramatists, with occasional lectures.

*15 *Lucian.*

2 hrs.

A general reading-course in prose, with discussion of the life and times of Lucian and of his influence upon modern literature. The *Dream*, *Charon*, *Timon*, *Angler*, and *True History* will be read, with many minor pieces, including the *Dialogues of the Gods* and *Dialogues of the Dead*. The Teubner text will be used together with Williams's *Selections from Lucian*.

[Omitted in 1900-1901.]

*16 *Greek Composition and Sight Reading.*

2 hrs.

Alternate exercises in composition and in translation at sight of selections from Xenophon. The course is designed especially for those who intend to teach.

[Monday and Friday, 5.00 P. M., 14 Phelps Hall.]

Assistant Professor OERTEL :—

- 17 *Greek Dialect Inscriptions.* 2 hrs.

Greek Dialect Inscriptions will be read chiefly from the grammatical side, together with the fragments of the lyric poets, with special reference to the help that may be derived from the inscriptions for the constitution of their text. The text-books are Cauer's *Delectus Inscriptionum Graecarum* and Bergk's *Anthologia Lyrica*.

[See course 19.]

Dr. HEERMANCE :—

- 18 *Monuments and Topography of Athens and Attica (Pausanias, Bk. i.)* 1 hr.

Lectures and reports on assigned topics.

[Omitted in 1900-1901.]

- *19 *Greek and Roman Architecture.* 1½ hrs.

[Omitted in 1900-1901.]

Mr. DICKERMAN :—

- 20 *Greek Epigraphy.* 2 hrs.

a. The local alphabets and the more important inscriptions written in them.

b. Attic inscriptions, selected for their historical or antiquarian interest.

[See course 17.]

- 21 *Modern Greek.* 1 hr.

A practical introduction to the subject, using A. Thumb's *Handbuch der neugriechischen Volkssprache* as outline, with some reference to other manuals. Particular attention will be given to the colloquial language.

LATIN

Professor PECK :—

- 22 *Critical and Exegetical Studies in the Epistles of Horace.*

See course 1, second half year.

- 23 *The Letters of Pliny, including the correspondence with the Emperor Trajan.* 2 hrs.

Tuesday, 9.30-11 A. M.

- *24 *Latin Inscriptions.* 2 hrs.
Such inscriptions will be selected as illustrate the history of the Latin language and Roman private antiquities.
Wednesday, 9.30-11.20 A. M.
- *25 *Tacitus (Annales, i-vi), Suetonius (Augustus and Tiberius), and Velleius Paterculus.* 2 hrs.
Monday and Thursday, 10 30 A. M.
- *26 *Roman Satire, with illustrative readings in Ennius, Lucilius, Horace, Persius, and Juvenal.* 2 hrs.
Monday and Thursday, 11.30 A. M.
- 27 *Lucretius.* 2 hrs.
[Omitted in 1900-1901.]
- 28 *Early Latin.* 1 hr.
[Omitted in 1900-1901.]
- *29 *The Letters of Cicero and Pliny.* 2 hrs.
In this course prominence will be given to the study of Roman private antiquities.
[Omitted in 1900-1901.]
- *30 *Hexameter Poetry.* 2 hrs.
Development of poetic forms and styles in Latin, with studies in Ennius (the Annals), Lucretius, Vergil (the Georgics), and Horace (the Epistles).
[Omitted in 1900-1901.]
- *31 *Roman Archaeology.* 1 hr.
[Omitted in 1900-1901.]
- *32 *Cicero (Brutus), Quintilian (x and xii), and Tacitus (Dialogus).* 2 hrs.
[Omitted in 1900-1901.]

Professors H. P. WRIGHT and INGERSOLL:—

- *33 *Latin Lyric Poetry.* 2 hrs.
Books iii and iv of the *Odes* of Horace; selections from Catullus; Latin Hymns.
[Omitted in 1900-1901.]

- *34 *Epigram and Comedy.* 2 hrs.
Selected epigrams of Martial ; three or four plays of Plautus.
Monday and Tuesday, 9.30-11 A. M., Phelps Hall.

Professor MORRIS.

- 35 *Plautus.* 2 hrs.
Lectures introductory to the study of Plautus, dealing with his life, the presentation of the plays, the history of the text, the history of Plautine criticism, the language, and the meters, to be followed by a critical study of a single play ; probably the *Bacchides*.
[Omitted in 1900-1901.]

- 36 *Historical Syntax.* 2 hrs.
Lectures on the history of work in Latin Syntax during this century and on the principles and methods of the historical investigation of the modes and tenses ; discussion of text-books and of a few typical specimens of work in this field ; a partial outline of the syntax of the modes and tenses from the historical point of view.
The lectures will be followed by a study of *parataxis*, the material for which is collected by the students who take the course.

- *37 *Vergil.* 2 hrs.
An introduction to Vergil, intended to give students who may expect to teach Latin an acquaintance with the best editions and commentaries and with works on special topics, the life of Vergil, the Aeneas legend, Vergil's relation to Greek poets and to earlier Roman poetry, mythology, Vergil in the Middle Ages. Parts of the text will be carefully interpreted and other parts will be translated and compared with English versions, and there will be practice in metrical reading.
[Omitted in 1900-1901.]

- *38 *Cicero.* 2 hrs.
An introduction to the orations of Cicero, dealing chiefly with the structure of the speeches and their historical interpretation, and similar in purpose to course 36.

Professor LANG.

- 39 *Low Latin.* 1 hr.
The aim of this course is to give an historical account of the popular speech of Rome and of the Roman provinces, and also

an outline of its grammar and syntax, as it is disclosed to us by classical Latin, the testimony of the Latin grammarians, inscriptions, mediæval documents, and the consensus of the Romance languages.

The course is taken up with lectures on the history and the grammar of Low Latin and the reading of a Low Latin text. For the present the following is used: J. F. Gamurrini, *S. Silviae Aquitanæ Peregrinatio ad Loca Sancta*. Editio altera. Romæ, 1888. Students should come provided *at the beginning* with E. Gorra's *Lingue neolatine* (Milano, Hoepli, 1894).

[Omitted in 1900-1901.]

Assistant Professor OERTEL.

40 *Latin Grammar.* 2 hrs.

A resumé of the chief results of comparative grammar as far as they affect Latin sounds and inflections. Constant reference will be made to the Italic dialects. Lindsay's *Latin Language* (1894) should be in the hands of the student and considerable reading in V. Henry's *Short Comparative Grammar of Greek and Latin*, Bechtel's *Hauptprobleme der indogermanischen Lautlehre*, Hirt, *Der indogermanische Akzent*, and Brugmann's *Grundriss der vergleichenden Grammatik*, etc., vols. I (2d ed., 1897) and II, will be necessary. A knowledge of Sanskrit is very desirable for this course.

41 *Practice in the Writing of Latin Prose.* 2 hrs.

This course is intended for advanced students in Latin. Students should provide themselves with H. Merge's *Repetitorium der lateinischen Syntax und Stilistik*, 7th ed., 1900, and his *Kursgefasste lateinische Synonymik*, 4th ed.

42 *The Italic Dialects.* 2 hrs.

After a brief survey of the peoples and languages of ancient Italy, the more important Oscan and Umbrian inscriptions are read and interpreted. This is followed by a brief systematic exposition of Oscan and Umbrian Phonology and Morphology in comparison with Latin. Students should provide themselves with v. Planta's *Grammatik der oskisch-umbrischen Dialekte*, 2 vols.

Assistant Professor INGERSOLL :—

43 *Latin Comedy.* 2 hrs.

About a dozen plays of Plautus, two or three of Terence, and the principal fragments from other writers of Latin Comedy.

A reading course, intended to supplement the critical work on Plautus in other courses.

44 *Latin Tragedy.* 1 hr.

The extant plays and fragments. History of Latin Tragedy.
[Omitted in 1900-1901.]

*45 *Latin Literature.* 2 hrs.

A general survey of the whole field, aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, both as to form and as to subject, and to characterize the several periods of the literature in the light of the changing conditions under which the development took place. Lectures, illustrative readings, and direction of the student's private reading. Designed especially for those who wish to take their bearings in preparation for special work in this department, and for those who, while their chief interest lies in other departments of study, desire to gain a general notion of the range and leading characteristics of a literature in which their previous reading has been more or less desultory.

[Tuesday and Friday 9.30-11 A. M., Phelps Hall.]

Dr. A. L. WHEELER.

*46 *Latin Composition.* 2 hrs.

During the first term the work consists of a rapid review of Latin syntax with oral and written practice in the principles involved. In the second term the higher principles of Latin writing will be studied in connection with some Latin prose text supplemented by a series of lectures on style. Throughout the year written exercises will be read and criticised in class.

The course is intended chiefly for those graduates and undergraduates who expect to teach.

[Omitted in 1900-1901.]

*47 *Latin Elegy.* 2 hrs.

This course aims to trace historically the development of elegy in Latin. Selections from Tibullus, Propertius, and Ovid will be read, supplemented by occasional lectures. Some outside (English) reading will be required.

[Omitted in 1900-1901.]

Mr. CLARK.

48 *Latin Palæography.* 2 hrs.

49 *Roman Law.*

2 hrs.

This course is intended to benefit those who desire an insight into Roman law as part of a liberal education as well as those who contemplate the study of law as a profession.

[Omitted in 1900-1901.]

INDO-IRANIAN PHILOLOGY AND LINGUISTICS

Professor HOPKINS:—

50 *Elementary Sanskrit.*

2 hrs.

Instruction in Sanskrit, beginning with Whitney's *Sanskrit Grammar*, and passing on to Lanman's *Reader*.

The elementary course in Sanskrit is designed especially for classical students, but it may be taken with profit by students of German or English, especially by those who intend to become teachers, and it is indispensable for those who pursue studies in the Comparative Grammar of Greek and Latin. The course is continued through the year, the first term being devoted mainly to the grammar, the second to interpretation. By the end of the year the student will have read portions of the classical and Vedic selections in Lanman's reader, and be fitted to pursue the work of the advanced course in the following year. On the other hand, he will have attained such familiar acquaintance with Sanskrit grammatical forms and syntactical structure, as greatly to aid his comprehension of parallel phenomena in other Aryan languages.

[Tuesday and Thursday, 3 P. M.]

51 *Advanced Sanskrit.*

2 hrs.

Selections from the Rig-Veda and Brahmanic texts.

This course is intended for those that have had already at least one year's instruction in Sanskrit. It is addressed particularly to students of literature, social institutions, and religion. The first half of the year will be occupied with reading selections from the Vedic Hymns, which are not only a priceless heirloom of early religious thought, but also a mine of information in regard to early institutions. The special topic of the second term's reading will be the philosophical portions of the first Brahmanic works and Upanishads, the earliest Aryan prose.

[Tuesday and Thursday, 4 P. M.]

52 *History of Sanskrit Literature.* 2 hrs.

This course consists in a review of Vedic and classical Sanskrit literature from the earliest times to the Puranic period, with extracts to illustrate the various phases of literary development. As it is expected that those who take this course will ordinarily have some knowledge of Sanskrit, the translation is made with reference to these students especially, and they are provided as far as possible with the original texts, as read from day to day. In this way this course forms also a reading-exercise parallel to that in Advanced Sanskrit.

[Wednesday, 3 P. M.]

53 *Introduction to Comparative Syntax.* 1 hr.

This course consists in an analysis of the syntactical facts presented by the Aryan languages, particularly Sanskrit, Greek, Latin, and early German. It is intended especially for students of these languages who desire a more thorough acquaintance with the problems of comparative syntax. To solve these problems a knowledge, if not of the Sanskrit language, at least of Sanskrit syntactical phenomena is necessary, and the lectures are accordingly planned with a view to explain these phenomena to those who have not studied Sanskrit as well as to those who have done so.

[Omitted in 1900-1901.]

54 *Avestan Language and Literature.* 1 hr.

Intended for those who desire to begin the study of Zoroaster's scriptures, the so-called Zend-Avesta. Avestan, or Zend, is easy for advanced Sanskrit students, and besides offering much of interest in respect of literature and religion, is also valuable to students of linguistics and syntax.

[Wednesday, 4 P. M.]

Assistant Professor OERTEL :—

55 *Phonetics.*

An introduction to general Phonetics based on a study of the English, French, and German sound-systems. The course is intended to furnish a basis for the study of the phonology of the various languages. Sweet's *Primer of Phonetics* (1890), Vietor's *Elemente der Phonetik* (3d ed., 1898) and Sievers's *Grundzüge der Phonetik* (4th ed., 1893) should be in the hands of the student. Storm's *Englische Philologie* (2d ed., 1896),

Bremer's *Deutsche Phonetik* (1893), Laura Soames's *Introduction to Phonetics* (1891), Passy's *Les Sons du Français* (4th ed., 1897) and Rousselot's *Les Modifications phonétiques* (1891) will be constantly referred to for collateral reading.

The Psychological Laboratory offers to advanced students every facility and all necessary apparatus for experimental investigation of phonetic problems. See Course I, 18.

56 *Linguistics.*

2 hrs.

An introduction to the scientific study of the life and growth of language, intended for students of the classics as well as for those of the modern languages. The course deals with the general principles and chief problems of linguistic science, such as the various methods of philological investigation, the manner and the causes of phonetic, semantic, and syntactical changes, the relation of language to thought, the theories regarding the "origin of language," the ethnological bearing of language, etc. Much stress will be laid on the psychological aspect of linguistic phenomena and constant reference will be made to the results of experimental psychology. The course consists of lectures, beside which parts of Paul's *Prinzipien der Sprachgeschichte* (3d ed., 1899) will be critically examined. (An English translation of the second edition of this book was published [1889] by the Macmillan Co., but is now out of print.) All other books needed for collateral reading will be found in the University and Departmental Libraries. Attention is called to Course I, 17, on the Psychology of Expression.

57 *Twelve Lectures on Indo-European Phonology.*

These lectures (three times a week during the first four weeks of the first term) are intended to present in rough outlines the most important facts of Indo-European phonology, viz: the vowel-system, strengthening and weakening, ablaut, the gutturals, and accent. These lectures are intended for those who are taking up courses in the historical grammar of either the classical or modern languages.

For a course in Greek History, see course II, 40.

For a course in Homeric social life, from the sociologist's standpoint, see course II, 27.

For courses in Greek Philosophy, see courses I, 22-25.

Graduate students of this University, with the approval of the classical instructors, are admitted to the free enjoyment of the privileges of the American School of Classical Studies at Athens.

THE CLASSICAL CLUB

Phelps Hall is assigned to the use of the Classical Department of the University. In addition to twelve ordinary class-rooms, three seminary rooms, and offices for instructors, it contains a large apartment for the library and reading-room of the Classical Club. This room is the headquarters of advanced students in classical philology, and furnishes to them the advantages of a good private library. It already contains more than twenty-five hundred volumes of texts, commentaries, works on antiquities, etc., as a departmental library. The books most needed for the immediate work in the classical courses for the present year are to be found there. The Club meets every Saturday and spends that evening in reading and discussing the work of some classic author, with reports and papers in the field of Greek and Latin Philology. During the year 1900-1901 the letters of Pliny and the plays of Euripides will be studied.

V. MODERN LANGUAGES AND LITERATURES

THOMAS R. LOUNSBURY, L.H.D., LL.D.	HENRY A. BEERS, M.A.
ALBERT S. COOK, Ph.D., L.H.D.	HENRY R. LANG, Ph.D.
ARTHUR H. PALMER, M.A.	GUSTAV GRUENER, Ph.D.
CHARLTON M. LEWIS, Ph.D.	ROBERT N. CORWIN, Ph.D.
WILLIAM HENRY BISHOP, B.A.	ROBERT L. SANDERSON.
WILBUR L. CROSS, Ph.D.	WILLIAM L. PHELPS, Ph.D.
ROBERT L. TAYLOR, B.A.	RICHARD T. HOLBROOK, B.A.
MEYER WOLODARSKY, Ph.D.	

ROMANCE LANGUAGES

Professor LANG :—

- 1 *Old French.* 2 hrs.
Introduction to the study of Old French language and literature in general, followed by a more especial study of Anglo-Norman.
[Monday and Thursday, 8.30 A. M., K, O].
- 2 *Old French. (Second year.)* 1 hr.
This will be a seminary course, consisting in the investigation of special subjects assigned to the students.
(Monday, 10.30 A. M., K, O.)

Mr. SANDERSON :—

- 3 *French Literature of the xvith Century.* 2 hrs.
[Tuesday and Friday, 11.30, E, O.]
- *4 *French Literature of the xviith Century.* 2 hrs.
During the first term the readings will be from such authors, whether from the 17th century or from later days, as will allow the student to form an idea of French Society in that period. The rest of the year will be devoted to readings from the dramatists, Corneille, Racine, Molière. Occasional papers on outside reading will be required during the year. Open to students who have taken Sophomore French or its equivalent.
[Monday and Thursday, 11.30 A. M., E, Osborn.]
- 5 *French Literature of the xviith Century.* 2 hrs.
[See Course 78, page 75.]
First, a study of the writers who continue or modify the dramatic traditions inherited from the 17th century, Regnard,

Marivaux, Voltaire, Diderot. etc.; but the main part of the course is devoted to a study of the evolution of French thought as manifested in the works and the influence of Montesquieu, Voltaire, Diderot, J. J. Rousseau.

This course will be conducted in French, and is open to graduate students and such Seniors as have satisfactorily passed course 72 or 75.

[Omitted in 1900-1901.]

***6 *French Literature of the sixteenth Century.* 3 hrs.**

This course covers the same ground as course 74, but is conducted in French, all exercises, written and oral, being intended to impart a command of the language as well as a knowledge of the literature. Open to students who have taken Sophomore French with credit or can satisfy the instructor that they are qualified.

[Omitted in 1900-1901.]

***7 *Practice in writing and speaking French.* 2 hrs.**

An advanced course in French grammar, composition and conversation, conducted in French. Open to students who have had at least two years of French and can satisfy the instructor of their fitness.

[Tuesday and Friday, 9.30 A. M., E. Osborn.]

***8 *General View of French Literature.* 2 hrs.**

Open to students who have taken Sophomore French or the equivalent. The object of this course, which is conducted in English, is to afford students the opportunity of becoming acquainted with the principal masterpieces produced in France since the 16th century. Ability to read French prose and verse rapidly is indispensable, as a large amount of reading will be required of students. The written work will consist of summaries, reports, in English, of some of the books read, of translations of selected passages, etc.

Students able to understand spoken French should take course *9, especially if they intend to carry on further their studies of French literature.

[Tuesday and Friday, 11.30 A. M., E. O.]

***9 *General View of French Literature.* 3 hrs.**

Open to students who have taken Sophomore French with credit or who can satisfy the instructor that they are qualified. This course covers the same ground as course 8, but is con-

ducted in French, all exercises, written and oral, being intended to impart a command of the language as well as a knowledge of the literature. Course 7, in addition to this course, is recommended to students desirous of acquiring a greater familiarity with the French language.

[Monday, Wednesday, Thursday, 10.30, E. O.]

Professor LANG.

10 *Provençal Language and Literature.* 2 hrs.

This course begins with lectures on the historical grammar of old Provençal, after which the origin and growth of Provençal lyric poetry, its style and metre, are studied in connection with the reading of selections from the works of the Troubadours. Students will come provided with Appel's *Provenzalische Chrestomathie* (Leipzig, 1895), and Restori's *Histoire de la littérature provençale* (Montpellier, 1894).

[Friday, 10.30–12.30.]

11 *Provençal (second year).* 1 hr.

This will be a seminary course, conducted together with the second year's course in Old French.

[Monday, 10.30 A. M., K, O.]

12 *Beginnings of Spanish Literature.* 1 hr.

This course comprises a study of the early literature of Castile previous to the 15th century, and its relations with the literatures of France and Italy. Gorra's *Lingua e letteratura spagnuola delle origini* is used as introduction to the work.

[Wednesday, 10.30 A. M., K, O.]

*13 *Dante's Life and Works.* 1 hr.

This is a strictly literary course, open only to those who have passed through course 18, or who shall otherwise satisfy the instructor of their fitness to take it.

After some introductory lectures on Italian poetry previous to Dante, and its relations to the literature of Provence and of France, the *Vita Nuova* and selections from the *Divina Commedia* will be read and explained.

Students will provide themselves with A. D'Ancona's edition of *La Vita Nuova* (2d ediz., Pisa, 1884), Fraticelli's edition of *La Divina Commedia* (Firenze, 1898), and Cassini's *Forme metriche italiane* (2d ed., Firenze, 1890).

[Wednesday, 8.30 A. M., K, O.]

14 *Italian Literature of the xiiith and xivth Centuries.* 1 hr.

Selections from the Early Italian Lyric School, from Petrarca and Boccaccio. Monaci's *Crestomazia italiana dei primi secoli*, (Città di Castello 1889 and 1897), Fornaciari's *Novelle scelte dal Decamerone di G. Boccaccio* (Firenze, 1889), and Rigutini's *Le Rime di Francesco Petrarca* (Milano, 1896), will be used.

[Omitted in 1900-1901.]

***15** *Spanish (Elementary Course).* 3 hrs.

In this course stress will be laid on the acquisition of a good pronunciation and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge, which is the leading aim of the instruction.

Knapp's *Spanish Grammar*; Alarcon's *El Final de Norma* and Perez Galdós' *Doña Perfecta* will be used as text-books.

[Monday, Wednesday and Friday, 9.30 A. M., K, O.]

***16** *Spanish Drama of the xvth and xvith Centuries.* 2 hrs.

This is a literary course, open only to such students as have passed through course 15 or who shall satisfy the instructor of their fitness by passing a special examination. Guillen de Castro's play *Las Mocedades del Cid* (edited by E. Mérimée, Toulouse, 1890) and *Select Plays of Calderon* (edited by Norman Maccoll, London, 1888) will be read, and lectures given on the origin and development of dramatic art in Spain.

[Tuesday and Friday, 9.30 A. M., K, Osborn.]

***17** *Spanish Fiction of the xvth and xvith Centuries.* 2 hrs.

Study of the novel of the golden age of Spanish literature, based on the reading of selections from works of the 16th century, but especially on Cervantes' *Don Quixote* (edition of Garnier, Hermanos, Paris, 1875).

[Omitted in 1900-1901.]

Mr. BISHOP :—

***17a** *Spanish.* 2 hrs.

The aim of the instruction in the Spanish department is to impart a correct pronunciation; facility in reading, through the choice of texts of varied range; to give considerable practice in composition, including letter-writing; and to make such beginning in conversation as may be a useful basis when further need and opportunity arise.

Grammar is reduced to the broad essentials, that the greater amount of time may be secured for the other work. In this view some such brief grammar as that of Manning is used, with reference to the fuller work of Ramsay. The reading-matter comprises animated plays, Spanish and Mexican newspapers, the magazine *España Moderna*, such fiction as Pérez Galdós *Episódios Nacionales*, Gorge Isaac's "Maria," the stories and sketches of Alarcón, Trueba, Rueda, etc. The philological cast of the language, as compared with the remainder of the group descended from the Latin, is explained. A conspectus is given of the representative periods of the earlier literature, based upon Ticknor; with a fuller account, accompanied by readings from their works, of Pereda, Valdés, Galdós, and Valera.

Mr. HOLBROOK :—

*18 *Italian (Elementary Course).* 3 hrs.

This course is open to those who have had Sophomore French or who shall otherwise satisfy the instructor of their fitness to take Italian. Stress will be laid on the acquisition of a good pronunciation and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge, which is the leading aim of the instruction.

Grandgent's *Italian Grammar* and Grandgent's *Composition*; Bowen's *Italian Reader*; Chapin's edition of Silvio Pellico's *Le Mie Prigioni*; Baragiola's edition of Goldoni's *Burbero Benefico*; Pellico's *Francesca da Rimini*; Bianchi's edition of the *Vita di Benvenuto Cellini scritta da lui medesimo*.

[Tuesday, Wednesday and Friday, 8.30, E. O.]

GERMANIC LANGUAGES

Professor PALMER :—

19 *Introduction to Germanic Philology.* 2 hrs.

A course introductory to the general study of Germanic philology, dealing with its history, methods, fields, and fundamental facts. The basis of the work will be Paul's *Grundriss der Germanischen Philologie*, of which portions will be read, discussed, and supplemented by informal lectures.

20 *Gothic.* 2 hrs.

An introductory course, especially for those who intend to study German or English historically, in the study of Gothic

and its phonological relations to both earlier Indo-Germanic and to later Germanic languages. Braune's *Gotische Grammatik*, or Streitberg's *Gotisches Elementarbuch*, Heyne's *Ulfilas*, Streitberg's *Urgermanische Grammatik*, and Henry's *Comparative Grammar of English and German*.

21 *Old High German.* 3 hrs.

A rather detailed course in the oldest High German dialects and literature. Braune's *Althochdeutsche Grammatik* and *Althochdeutsches Lesebuch*, and the collateral literature for reference.

[Omitted in 1900-1901.]

22 *Old Saxon (Low German).* 2 hrs.

A rather detailed course in grammar and study of the *Heliand* and the lesser monuments. Holthausen's *Altsächsisches Elementarbuch* and Behaghel's *Heliand*, with all the important literature of the subject available for reference.

*23 *Goethe, Works and Life.* 3 hrs.

Together with outline study of Goethe's life and development in connection with his lyric poems, his early prose writings, and his principal dramas, particular attention will be given to Faust I and II, the later prose works and Goethe's important utterances in letters, journals and conversations.

*24 *History of German Literature, 1624-1832.* 2 hrs.

The development of German literature will be studied from the time of Opitz to Goethe's death. The text-books will be: Kluge's *Geschichte der deutschen National-Litteratur*, Scherer's *History of German Literature*, Max Müller's *German Classics*, and Hillebrand's *German Thought from the Seven Years' War to Goethe's Death*.

[Omitted in 1900-1901.]

Professor GRUENER :—

25 *Middle High German.* 3 hrs.

Hartmann: *Der arme Heinrich* and *Iwein*. *Nibelungenlied*. Selected poems of Walther von der Vogelweide. Selections from Wolfram von Eschenbach's *Parzival*. Lectures and papers.

26 *German Literature of the Reformation Period*
(1500-1624).

3 hrs.

The development of German literature is studied from the beginning of the Reformation to the time of Opitz. Characteristic works of the important writers of the period are read chiefly for literary purposes, though also with reference to the political, social, and religious conditions of the times.

[Omitted in 1900-1901.]

*27 *Schiller, Works and Life.*

2 hrs.

Rapid reading of plays, poems, and prose writings of Schiller, with study of his life. The object of this course is to acquaint the student more fully with the vocabulary and style of standard German literature, and to present Schiller's character and influence as a writer and thinker.

[Tuesday and Friday, 9.30 A. M., F. O.]

Professor CORWIN :—

28 *German Literary Criticism.*

1 hr.

A course of study in the development of the theories of poetry and the principles of literary criticism in Germany. The course consists of lectures, discussions, and readings based on the critical writings of Lessing, Herder, Schiller, Goethe, Schlegel, and Freytag.

[Friday, 2 P. M., 117 N.]

Dr. ANDREEN :—

29 *Old Norse (Icelandic).*

3 hrs.

Grammar, and reading in the Sagas and the Elder Edda.

30 *Germanic Mythology.*

2 hrs.

A course of studies in the mythology of the Germanic race, based on the earliest Scandinavian, German and English literatures and on collateral sources,

[Omitted in 1900-1901.]

31 *History of Swedish Literature to 1718.*

2 hrs.

The development of Swedish literature will be traced in connection with Schück's *Svensk Litteraturhistoria*, and selections from the works of the leading authors studied. This course is intended only for those who already have a good reading knowledge of Swedish.

32 *History of Modern Norwegian Literature.* 2 hrs.

This course will be based on Jaeger's *Den Norske Literaturs Historie*. Leading works of Bjørnson and Ibsen will be the subject of special study. This course is open only to those who already have a good reading knowledge of Norwegian.

[Omitted in 1900-1901.]

33 *Norwegian and Danish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar there will be read selections from the writings of modern authors.

34 *Swedish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar there will be read selections from the writings of modern authors.

[Omitted in 1900-1901.]

RUSSIAN

Dr. WOŁODARSKY.

35 *Elementary Russian.*

The first term will be given to the study of the elements of the language in connection with the reading of short stories by modern writers.

The second term will be given to the study of syntax in connection with the reading of one of Turgenev's works.

36 *Advanced Russian.*

A general course in Russian Literature in connection with the reading of a historical chrestomathy and with sight-reading in "On the Eve," by Turgenev and in "Master and Man" by Tolstoi.

ENGLISH

Professor LOUNSBURY :—

37 *The Early Victorian Era : Tennyson and his Contemporaries.* 2 hrs.

Professor BEERS :—

- *38 *Milton and his Contemporaries.* 2 hrs.

The subject will be treated with special reference to the political and religious conflict of the times. All of Milton's English verse will be read, a few of his Latin poems, and much of his prose. The work of the church poets and cavaliers will be examined, as also various diaries and memoirs, and portions of the writings of Fuller, Clarendon, Butler, etc.

- *39 *English Romanticism in the Nineteenth Century.* 2 hrs.

A lecture course, with frequent examinations and assigned reading, in the history of the subject from Walter Scott to William Morris.

Professor COOK :—

The strictly graduate courses offered below are given according to circumstances and the needs of the graduate students actually in attendance; and special attention is given to the supervision of individual research in any part of the general field.

- 40 *Encyclopædia and Methodology of English.* 2 hrs.

This course is designed to acquaint the student with the more important branches of scholarship relative to the English language and literature, with a few of the representative books in each, and with the scope and method of research in this department.

[Wednesday, 4 P. M.]

- 41 *Theories of Poetry.* 2 hrs.

A course in the theories of poetry in general, and in the principles of criticism applicable to its various departments, as the epic, dramatic, and lyric. Discussions and papers on the basis of standard works, such as Aristotle's *Poetics*, Sidney's *Defense of Poesy*, Woodbridge's *The Drama*, Boileau's *Art of Poetry*, Lessing's *Laokoon*, and others of similar character. Reading of masterpieces to illustrate and extend the principles derived from theoretic works.

[Wednesday, 3 P. M.]

- 42 *Dante in English.* 2 hrs.

A course primarily in the *Divina Commedia* and the *Vita Nuova*. Two or three of the best English translations will be employed, together with such reference books as may be necessary.

[Tuesday, 3.00 P. M.]

- 43 *Advanced Old and Middle English.* 2 hrs.

A survey of the subject for those who are not yet prepared for minuter specialization.

[Monday, 9.30 A. M.; Thursday, 11.30 A. M.]

- 44 *Seminary in English Literature.* 3 hrs.

A critical study of some representative writer or department of literature. In 1894-95, Ben Jonson was the author selected; in 1895-96, Browning; in 1896-97, Chaucer; in 1897-98, the Jacobean Drama; in 1898-99, Spenser; in 1899-1900, Chaucer.

[Alternate Mondays at 7 P. M.]

- 45 *Historical English Prosody.*

Schipper's *Englische Metrik* is adopted as the basis of study, but reference is made to other authorities.

- *46 *Old and Middle English.* 2 hrs.

An elementary course in the beginnings and earlier development of the English language and literature. Reading is begun at the earliest practicable moment, and the study is made as literary in character as is consistent with a thorough grounding in the rudiments of the language. This course, while it is indispensable to all graduate students and future teachers of English, and will also be of service to students of English history and of the English Bible, is designed as well for those who, in the pursuit of general culture, are unwilling to remain ignorant of the foundations of the English language and literature.

[Monday and Thursday, 10.30 A. M.]

Assistant Professor CROSS :—

- 47 *English Prose Fiction.* 2 hrs.

The aim of this course is to present in outline the development of the English novel. Twenty-five or more prose fictions will be taken up in their logical order, and discussed in their relation to one another and the fiction of their time, both English and Continental. Among the books selected for 1900-1901 are the *Morte Darthur*, the *Arcadia*, *Clarissa Harlowe*, *Tom Jones*, *Mansfield Park*, *Waverley*, *Martin Chuzzlewit*, *Vanity Fair*, and *Adam Bede*.

[Tuesday and Thursday, 2 P. M.]

Professor LEWIS :—

*48 *Verse Composition.*

1 hr.

A study of the principles of English versification, with weekly or fortnightly practice in composition. The purpose of this course is partly to familiarize the student with the chief varieties of English verse and stanza (such as blank verse, heroic verse, the sonnet, etc.), and partly to give him the added command of language that results from practice in difficult forms.

[Thursday, 9.30 A. M.]

Assistant Professor PHELPS :—

*49 *Elizabethan Drama.*

2 hrs

The English drama, from the mystery plays to the closing of the theatres in 1642, studied from both the literary and the dramatic point of view. Plays of the pre-Elizabethan period are read and briefly discussed, with the object of getting a historical background. Some plays of all the principal dramatists from 1580 to 1640, except Shakespeare, will be read: Marlowe, Ben Jonson, Dekker, Heywood, Chapman, Middleton, Beaumont and Fletcher, Webster, Ford, Massinger, Shirley. As a rule, one play will be read for each lesson.

The method of instruction in this course will be by lectures; but a weekly one-page critical theme will be required of each student in the class.

[Omitted in 1900-1901.]

50 *Elizabethan Literature.*

2 hrs.

Studies in the poetry and prose of the Elizabethan period, exclusive of the drama. Wyatt, Surrey, Ascham, Foxe, Painter, Lyly, Raleigh, Greene, Nash, Lodge, Marlowe, Hooker, Sidney, Spenser, Shakespeare, Davies, Drayton, Chapman, and others. Lectures, discussions, and preparation of special papers by members of the class.

[Omitted 1900-1901.]

*51 *Tennyson and Browning.*

2 hrs.

The autumn term will be occupied with the study of Tennyson. Practically all of his poetry will be read. His theory of the poet's art, his skill in technique, his artistic expression, and his representation of nineteenth century ideas will be studied in detail.

After Christmas, the complete works of Browning will be taken up, only those being omitted which are unnecessary in forming a general estimate of his work as a poet. His personal force, his growth, his attitude toward his art, and his place in nineteenth century poetry will be considered; but the chief attention will be paid to his analysis of human life and character.

The instruction in this course will be by means of recitations, discussions, and the preparation of short special papers by the students.

[Wednesday and Saturday, 8.30 A. M.]

*52 *English Literature of the Seventeenth Century.* 2 hrs.

A rather minute study of English poetry and prose from Donne to Dryden. The poetry of Donne, Drummond, Herbert, Crashaw, Vaughn, Quarles, Carew, Suckling, Herrick, Cowley, Milton, Waller, Marvell, Butler, and Dryden will be read; also the prose of Burton, Browne, Taylor, Pepys, Fuller, Walton, Clarendon, Milton, Bunyan, and Dryden. The social life of the times will be also discussed.

[Tuesday and Friday, 8.30 A. M., 176 Lyc.]

THE MODERN LANGUAGE CLUB, formed of instructors and students in the departments of English, Romance Languages, and German, holds its regular meetings on the second Saturday evening of each month for the reading and discussion of original papers, and for reports of progress in the field of these studies.

THE ENGLISH CLUB, to which are invited all persons, whether members of the University or not, who are interested in the study or teaching of the English language or literature, meets on alternate Monday evenings to listen to the presentation of some topic, and engage in the informal discussion of it. The club never remains in session over an hour, and thus opportunity is afforded for keeping other engagements the same evening.

THE ENGLISH SEMINARY ROOM, at 135 Elm st., which has lately been enlarged for the better accommodation of graduate students in English, contains the nucleus of a working library. This room is general headquarters for the graduate students in English, and serves for the meetings of the English Club, and for similar purposes.

VI. NATURAL AND PHYSICAL SCIENCE

WILLIAM H. BREWER, Ph.D.	SIDNEY I. SMITH, M.A.
ARTHUR W. WRIGHT, Ph.D.	HENRY S. WILLIAMS, Ph.D.
ADDISON E. VERRILL, M.A.	CHARLES S. HASTINGS, Ph.D.
WILLIAM G. MIXTER, M.A.	RUSSELL H. CHITTENDEN, Ph.D.
EDWARD S. DANA, Ph.D.	HORACE L. WELLS, M.A.
FRANK A. GOOCH, Ph.D.	LOUIS V. PIRSSON, Ph.B.
SAMUEL L. PENFIELD, M.A.	ALEXANDER W. EVANS, M.D., Ph.D.
CHARLES E. BEECHER, Ph.D.	PHILIP E. BROWNING, Ph.D.
WILLIAM J. COMSTOCK, Ph.B.	LAFAYETTE B. MENDEL, Ph.D.
HENRY L. WHEELER, Ph.D.	BERTRAM B. BOLTWOOD, Ph.D.
HENRY S. GRAVES, B.A.	WESLEY R. COE, Ph.D.
ISAAC K. PHELPS, Ph.D.	JAMES LOCKE, Ph.D.
HERBERT E. GREGORY, Ph.D.	

MINERALOGY

Professor DANA :—

1 *Mineralogy and Crystallography.* 2 hrs.

Practical study of mineral species by means of blowpipe analysis and other methods; also mathematical study of the forms of crystals. Additional opportunity is given to those who desire it to gain facility in the determination of minerals.

This course can be most advantageously prosecuted by those who have some knowledge of chemistry.

[Saturday, 9.30–11.20 A. M.]

Professor PENFIELD :—

2 *Determinative Mineralogy.* 3 hrs.

This course consists at first of a few exercises in blowpipe analysis, which are then followed by an application of these methods to the determination of minerals. Students have abundant opportunity to experiment with minerals, and thus become familiar with their chemical and physical properties. A labeled collection of carefully selected specimens for comparison, and unlabeled collections for identification, are at all times accessible. The laboratory is open daily from 9–1 and (Saturdays excepted) from 2.30–5, so that by devoting more than the allotted time to the subject the course may be considerably extended.

[Wednesday, 2.30–5.30 P. M., or Saturday, 9.15 A. M.–12 M.]

3 *Crystallography* 2 hrs. 1st half of 2d term.

Lectures in which the symmetry relations of the various systems, and the forms of crystals and their physical properties are discussed. Throughout this course collections of natural crystals and wooden and glass models are used for demonstrating varieties of form and development.

[Monday and Tuesday, 3-4 P. M.]

4a *Descriptive Mineralogy.* 3 hrs. 2d half of 2d term.

Lectures on the general subject of mineralogy, in which the classification, physical and chemical properties, occurrences, associations, and uses of minerals are discussed. The course is illustrated by the valuable and extensive Brush Collection.

[Monday and Tuesday, 3-4 P. M., and Saturday, 9.15-10.15 A. M.]

4b *Descriptive Mineralogy (Advanced Course.)*

1 hr. 1st and 2d terms.

This course is open to those who have had courses 3 and 4a. Specimens in the Brush Collection are examined, and special prominence is given to the discussion of the economic and geological relations of minerals.

5 *Experimental Work in Crystallography and Mineralogy.*

Daily.

The reflecting goniometer is used, the mathematical relations of crystal forms are carefully determined and calculated, and the forms are drawn. The optical properties of crystals are studied and determined by means of the polariscope, polarizing microscope, refractometer, total reflectometer, and other appliances.

6 *Original Investigation in Mineralogy and Crystallography.*

Opportunities are offered to those who are far enough advanced, for research work in mineralogy and crystallography. This includes the study of the chemical composition and deduction of the formulae of minerals, together with the determination of their physical, optical, and crystallographic properties.

Material for investigation is available from the University and Brush Collections.

GEOLOGY

Professor WILLIAMS :—

*7 *Geology.* 2 hrs.

A course of lectures on the general principles of the science of geology. Historical geology will be studied chiefly from a geological standpoint ; the special study of the relation of organisms to geology will be considered in the following course.

[Tuesday and Friday, 9.30 A. M., 5 M.]

8 *Geological Biology.*

The study of fossils in the laboratory, and with field-work, so far as practicable, (1) as means of determining and classifying geological formations, (2) as evidence of the relations of organisms to their environment, and of their evolution in the past.

For this course some knowledge of zoology is desirable ; and for those who wish to take the course, and are not sufficiently well prepared in this direction, preliminary work in the zoology of living forms is planned.

Instruction is given also by informal lectures and the assignment of courses of reading of geological literature bearing upon the problems under investigation.

The number of hours and the specific line of study will be arranged by the instructor upon consultation in each case.

Professor PIRSSON :—

9 *Petrology.* Daily, 9 A. M. to 1 P. M.

(a) Study and determination of the rock-making minerals by optical and chemical methods. Includes the use of the petrological microscope.

(b) History, origin, and classification of rocks, commencing with igneous types and passing into the crystalline schists, during which metasomatic and dynamic changes, including effects of dynamo-metamorphism, are taken up. The work is carried on mostly in the laboratory, with access to collections both of rocks and thin sections.

(c) Original investigation. In sequence to (a) and (b) some special object or locality may be made the subject of investigation. The work requires laboratory methods of determination, both chemical and microscopical, with consultation of the literature and occasionally work in the field. A large amount of material is available in the petrologic collections of the Sheffield Scientific School.

Only those whose previous training in mineralogy and geology has been sufficient to enable them to pursue the subject advantageously are admitted to this course.

10 *Elementary Petrology.* 1 hr. first half 2d term.

A series of lectures of an elementary nature, and without the use of the microscope, on the history, origin, and classification of rocks with especial reference to their geologic relations and economic properties. Illustrated by collections.

[Hour to be arranged.]

*11 *Elementary Structural and Dynamical Geology.*

3 hrs. first half-year.

This course in Geology is given partly by lectures and partly by recitations with the use of a text-book. It includes the elements of Structural and Dynamical Geology and these subjects are illustrated by maps, diagrams, photographs and specimens. The course is especially designed as an introduction to more extended geological studies and may be followed advantageously by course *19.

MR. GREGORY :—

*12 *Physical Geography.* 3 hrs. first half-year.

A course of lectures on the elements of Physiography. The time will be largely occupied with a study of the land—mountains, rivers, plateaus, etc.; but the atmosphere and the ocean will also receive attention. Two points will be kept in view; first, the history and development of land forms into their present condition as natural scenery, and second, the effect of territorial features and climate upon the human race.

Assigned readings and occasional excursions may be required.

[Tuesday, Wednesday, and Thursday, 5.00 P. M., 37 North Sheffield Hall.]

For a course in Physical Geography in its relation to history, see Political and Social Science, course 29.

PALEONTOLOGY

Professor BEECHER :—

13 *General Invertebrate Paleontology.* 2 hrs. 1st term.

An elementary course, including the careful study in the laboratory of characteristic genera representing the principal orders of fossil invertebrates.

14 *Invertebrate Paleontology (Faunal).*

The study of extinct faunas by means of collections of fossils from typical localities.

15 *Invertebrate Paleontology (Special).*

Systematic study of the structure, development, and affinities of one or more classes of fossil animals. In the laboratory work, attention is given to modern methods of preparation and preservation of specimens.

16 *Original Investigation in Invertebrate Paleontology.*

Following 15, 16, 17, opportunity is given to take up some special subject for investigation and the discovery of facts new to science.

The requisite material is available in the extensive collections of the Peabody Museum.

The work in these courses (15-18) necessitates the frequent consultation of memoirs and scientific reports, occasional field-work, the use of the microscope, the preparation of thin sections, and other methods employed in thorough investigations.

17 *Organic Evolution.*

1st half year.

Practical illustration of the methods used in modern researches.

18 *Taxology.*

1st half 2d term.

The principles governing the classification of organisms.

Courses 15-20 are open to those who have had some previous knowledge of geology and zoology. Course 15: laboratory work 4 hours per week. Courses 16, 17: laboratory work three days per week, 2-5 P. M. Courses 19 and 20 will require about two hours lecture and two hours in the laboratory each week. Other hours and divisions of work may be arranged to suit the convenience of students.

*19 *Historical Geology.*

3 hrs. 2d half-term.

The sequence and distribution of the sedimentary formations are studied, together with the introduction and succession of the various types of life during past geological ages. Suitable collections of fossils are used to illustrate the subject. This course should follow VI, *12.

PHYSICS

Professor A. W. WRIGHT :—

20 *Physics*. 4 hrs. to count as 2 hrs.

Chiefly practical work in the Sloane Physical Laboratory, with measurements, especially in heat, light, electricity, and magnetism, each exercise occupying two hours. As introductory to the laboratory practice, the exercises during a portion of the first term consist of recitations or discussions upon the theory and methods of physical measurements, the use of instruments, and other special topics. Laboratory facilities are also freely accorded to students of the course at other times than those of the stated exercises.

21 *Physics (Advanced Course)*. 4 hrs. to count as 2 hrs.

Practical work in the Sloane Physical Laboratory, with instruction in the principles and methods of physical investigation, the processes and instruments of measurement, and the methods of computing and reducing results of observations. Special attention is paid to practical measurements in optics, electricity, and magnetism. The student is expected to make original investigations an important part of his work, and has the free use of the laboratory facilities for carrying them on.

For those who have already pursued course 22 or its equivalent.

Professor HASTINGS :—

22 *Physics*. 3 hrs. lectures, 6 hrs. laboratory work.

Laboratory work, supplemented by lectures on the theory of observation with the method of least squares, and on the theory of electricity and electrical instruments. The use of the laboratory is at the command of the student at all times.

[Lectures on Wednesday, Friday, and Saturday, 12 M.]

For courses in Mathematical Physics, see VII.

THE PHYSICS JOURNAL CLUB, open to graduate students in Physics, meets weekly for the review and discussion of the current literature in this department of study.

THE PHYSICAL CLUB, organized for study, criticism and discussion, holds fortnightly meetings. Open to graduate and advanced students in Physics.

CHEMISTRY

(COURSES IN THE SHEFFIELD CHEMICAL LABORATORY)

The analytical laboratories of the Sheffield Scientific School are open to students in term time from 9 to 1 and from 2 to 5 o'clock, every week-day except Saturday. The greater part of the instruction is given in the laboratory to each student separately, but the various classes have, in addition, two or more lectures or recitations a week, in connection with the studies pursued in the laboratory.

Professor MIXTER :—

23 *Chemical Physics.*

Especially the methods employed in the determination of molecular masses and specific heat.

Professor WELLS :—

24 *Qualitative Analysis.*

1st term.

Embraces a study of the commonly occurring elements in their qualitative relations, and includes a systematic course of analysis for the same. A good knowledge of elementary chemistry is a necessary preparation for this. If desired the course is extended to include a study of many of the rare elements.

[Laboratory hours : Monday to Friday, 9 A. M. to 1 P. M., and 2 to 5 P. M. Lectures and Recitations : Monday and Tuesday, 5 P. M.,—occasionally at 12 M.]

25 *Quantitative Analysis.*

This is open only to those who have taken course 25 or its equivalent.

(a) *Gravimetric Analysis.* Second term. Embraces a series of exercises involving a considerable number of important methods.

(b) *Volumetric Analysis.* First term. This follows the gravimetric analysis. It includes the most important and typical methods.

(c) *Ultimate Organic Analysis.* First term.

26 *Inorganic Preparations.*

1st half of 2d term.

A course of laboratory work, with lectures or recitations. About twenty or thirty compounds are prepared, which give a variety of important and instructive processes.

27 *Advanced Quantitative Analysis.*

(a) *Metallurgical Chemistry.* The analysis of ores, fuels, fluxes, alloys, metals, and other furnace products.

(b) *Mineralogical Chemistry.* The analysis of minerals for scientific purposes.

Laboratory hours, every week-day (except Saturday) 9 A. M. to 1 P. M., and 2 to 5 P. M.

28 *Metallurgy and Assaying.* 2d half of 2d term.

A course of lectures on elementary metallurgy, followed by a short course of demonstrative lectures on gold and silver assaying, with the practical application of assaying to a few typical ores.

29 *Technical Gas-Analysis.* 2d half of 2d term.

A short practical course, including the principal methods.

30 *Investigations in Inorganic Chemistry.*

Opportunities are offered, to those who have had sufficient preparation, to make researches upon analytical methods, the preparation of chemical compounds, and other scientific problems.

Mr. COMSTOCK :—

31a *Elementary Organic Chemistry.* Both terms.

During the first four weeks of the second term the afternoon exercises are omitted and daily laboratory work substituted, 9 A. M. to 1 P. M., with occasional lectures at 12 M.

[Recitations supplemented by lectures, Thursday and Friday, 5 P. M.]

31b *Organic Chemistry.* 2 hrs. 1st term.

A continuation of the above course. Recitations and lectures. [Thursday and Friday, 5 P. M.]

Dr. LOCKE :—

32a *The Systematization of Inorganic Compounds.* 1st term.

[Lectures, Monday and Friday, 4 P. M.]

*32b *Advanced Inorganic Chemistry.* 3 hrs. 1st term.

[See Chemistry, page 167.]

- 33 *The Application of the Ionic Theory to Analytical Chemistry.* 2 hrs. 1st half 2d term.
Ostwald's *Foundations of Analytical Chemistry* will be followed.
[Lectures, Monday and Friday, 4 P. M.]
- 34 *The Constitution of Chemical Compounds.* 2 hrs. 2d half 2d term.
Methods of determination illustrated on typical compounds; stereochemistry; double compounds, etc.
[Monday and Friday, 4 P. M.]

Assistant Professor H. L. WHEELER :—

- 35 *Advanced Organic Chemistry.*
This offers an opportunity for more extended study and original investigation to those who have proper preparation.
- 36 *Organic Preparations.* 2nd half of 2d term.
Laboratory-work, consisting of five exercises per week of about three hours each in the preparation of such compounds as will give familiarity with the most important synthetical methods.
- Dr. BOLTWOOD :—
- 37 *Physical Chemistry.* 1st half of 2d term.
A course of about twelve lectures on the theory of Physical Chemistry.
[Monday, 5 P. M.]
- 38 *Physico-Chemical Measurements.* 2d term.
Laboratory practice in the more important methods of Physical Chemistry.
[Monday to Friday, inclusive, 9.30 A. M. to 1 P. M.]
- 39 *Electrochemistry.* 1st half of 2d term.
A course of twelve lectures on the theory of Electrochemistry.
[Friday, 5 P. M.]
- 40 *Electrochemistry.* 2d term.
Experimental work in Electrochemistry, including the usual measurements, quantitative electro-analysis, and the synthesis of organic and inorganic compounds.
[Monday to Friday, inclusive, 9.30 A. M. to 1 P. M.]

(COURSES IN THE KENT LABORATORY)

The Kent Laboratory is open daily from 9 A. M. to 1 P. M., and from 2 to 5 P. M., to students who take strictly graduate courses.

Professor GOOCH, Assistant Professor BROWNING, and
Dr. I. K. PHELPS :—

- *41 *Inorganic Chemistry—Experimental and Descriptive.* 3 exercises—6 hrs.

Lectures, laboratory work, and written exercises. An introduction to elementary chemical theory, the use of symbols and equations, and the study of the elements and their compounds.

Assistant Professor BROWNING :—

- *42 *Qualitative Chemical Analysis.* 3 exercises—5 hrs.

Laboratory practice in the ordinary processes of qualitative analysis, with lectures.

Professor GOOCH and ————— :—

- *43 *Organic Chemistry.* 2 exercises—4 hrs.

An introduction to the study of the compounds of carbon. Lectures with laboratory work. Open to those who have completed course 210, or its equivalent.

Dr. I. K. PHELPS :—

- 44 *Organic Synthesis.*

Laboratory practice in synthetical processes too long or too complicated to be included in the experimental work of course 43.

[Daily ; hours for consultation fixed by appointment.]

Professor GOOCH :—

- *45 *Quantitative Analysis.* 2 exercises—6 hrs.

Lectures with laboratory practice in the use of the simpler methods of gravimetric and volumetric quantitative analysis.

- 46 *Quantitative Chemical Analysis (second course).*

Practice in the more complex processes of gravimetric, volumetric, and electrolytic analysis.

[Daily ; hours for consultation fixed by appointment.]

- [47 *Chemical Theory.* 1 hr.

This course (given in alternate years) is devoted to the discussion of the general principles and modern theories of chemistry. It will be omitted in 1900-1901.]

- 48 *Special Methods.*

Laboratory practice in special methods of analysis and research.

[Daily ; hours for consultation fixed by appointment.]

- 49 *Original Work and Research in Inorganic Chemistry.*

(a) Special problems of *analysis*—either experimental criticism of known processes or constructive work looking towards the development of new methods.

(b) The critical examination of reactions.

[Daily ; hours for consultation fixed by appointment.]

Assistant Professor BROWNING :—

- 50 *The Rare Elements.* 1 hr. both terms.

A short course of lectures covering the discovery, occurrence, and principal reactions of the elements not included in the general course. The methods in use for the qualitative and quantitative determinations are carefully studied, and a systematic arrangement developed so far as practicable. Those who wish to do so may take laboratory work in connection with these lectures.

[Thursday, 8.30 A. M.]

- 51 *Inorganic Preparations.* 1 hr. both terms.

A short course, mainly laboratory work, covering typical methods for the preparation of inorganic salts. Thorp's *Inorganic Preparations* will serve as guide.

THE CHEMICAL CLUB, composed of instructors, graduate students, and others interested in chemistry, holds fortnightly meetings for the presentation and discussion of papers and reviews of recent work.

BIOLOGY

Professor VERRILL :—

52 *Zoology.*

Laboratory practice, recitations, readings, and lectures. The laboratory work is varied according to circumstances, in order to accommodate, as far as possible, those students who wish to pursue special branches. Most of the time is devoted to comparative anatomy, morphology, histology, and systematic zoology. Ample collections in the Peabody Museum, representing all classes of animals, are available for instruction, while the proximity to the sea makes it easy to provide fresh or living examples of most classes of marine animals for study and dissection.

Professor S. I. SMITH and Dr. COE :—

*53 *Elementary Anatomy and Histology.* 4 hrs. 1st term.

*54 *Comparative Anatomy and General Biology.* 6 hrs. 2d term.

55 *Comparative Anatomy and General Biology.*

Graduate students who have had sufficient elementary training are received in the Sheffield Biological Laboratory, and are provided with special advanced courses of instruction adapted as far as possible to the particular wants of the individual student. Such courses may cover either or both terms, and require at least three hours of laboratory work per day for two or more days each week. To such students the laboratory is open five days a week.

Professor CHITTENDEN and Assistant Professor MENDEL :—

56 *Physiological Chemistry.*

Graduate students who have sufficient knowledge of analytical and organic chemistry and elementary physiology are received in the Sheffield Biological Laboratory at the beginning of the academic year, where they can pursue a course in physiological chemistry extending throughout the entire year. The course necessitates, on an average, four hours of laboratory work each day, and attendance at lectures and recitations three or four times each week. Opportunities are afforded also for the carrying on of original investigations, and to students qualified for such work the laboratory is open during the entire day.

Students who are desirous of studying any special subject in physiological chemistry and have but a limited amount of time are received also, provided they are qualified by previous work to pursue the study advantageously.

[Monday to Friday, inclusive, 9 A. M. to 1 P. M.]

57 *Experimental Physiology.* 3 hrs.

Essentially a laboratory course intended to afford experimental acquaintance with certain departments of physiology, and giving particular reference to general physiological methods. The physiology of muscle and nerve, of the circulation, secretion, etc., is considered in some detail. Other departments are treated in a more elementary manner; a brief survey of the entire field is thus afforded, while certain topics are studied with sufficient thoroughness to give training in technique and appreciation of the aims and methods of research. Opportunity is also afforded for more advanced work in certain lines of experimental physiology.

[Saturday, 9 A. M. to 1 P. M.]

58 *Physiological Seminary.* 2 hrs. both terms.

A study of the recent advances in physiology and physiological chemistry is undertaken. Informal talks are given on the bearing which recent discoveries in physiology have on existing views, and the students are required to prepare reports and reviews of work appearing in the current German, French, and English physiological literature.

[Wednesday, 4 to 6 P. M.]

Professor CHITTENDEN :—

59 *Experimental Toxicology.* 2d half 2d term.

A course of about twenty lectures, with demonstrations on the physiological action of the more important mineral and alkaloidal poisons. This course can be supplemented, if desired, by laboratory work on the chemical reactions of poisons, with a study of the methods of detecting and separating poisons.

[Tuesday, Thursday, and Saturday, 8.10 A. M.]

*60 *Physiology.* 1 hr.

Huxley's *Lessons in Elementary Physiology*, with occasional lectures and illustrative experiments.

[Wednesday, 2 P. M., B. L.]

*61 *Physiological Chemistry.* 4 hrs. 2d term.

Four exercises a week, of a minimum of two hours each, in the laboratory of physiological chemistry. The time is devoted mainly to a study of the chemistry of the connective, contractile, and nervous tissues, of the chemical processes of salivary, gastric, and pancreatic digestions, and so far as the time allows, of other subjects connected with the physiology of nutrition and the chemistry of the excretions.

A laboratory fee is charged for this course. The student in addition must bear the expense of gas, flasks, etc., which should not exceed ten dollars.

*62 *Physiology of Nutrition.* 3 hrs. 1st half 2d term.

Dr. EVANS:—

*63 *Botany.* 3 hrs. 2d half-year.

An elementary course in the botany of flowering plants. Laboratory work and recitations. The plant and its various organs are studied with respect to their form, structure, and functions, and special emphasis is laid on the relationships of a plant to its environment.

[Tuesday and Thursday, 2 P. M. ; Wednesday, 5 P. M.]

64 *General Morphology of Plants.* 4 hrs.

Laboratory work and informal lectures. Beginning with the simplest forms, the various groups of plants are taken up in suitable types, and their structure, development, and mode of life are studied and compared.

The course is limited to those who show a satisfactory knowledge of the botany of flowering plants.

[Wednesday and Friday, 3 P. M.]

65 *Advanced Morphology and Taxonomy of Plants.*

The botanical laboratory is open throughout the year to graduate students, properly qualified, who may wish to pursue advanced studies along some special line in morphological or taxonomic botany. The instruction will be adapted as far as possible to the needs of the individual student.

Dr. COE :—

66 *Cytology and General Embryology.* 4 hrs. 1st term.

Laboratory work, supplemented by lectures, on the animal cell in the principal phases of its activity, with special reference to maturation, fertilization, and cleavage of the ovum. The course will include the practical study of protoplasmic structure and movement, cell with resting nucleus, cell-division, spermary and spermatozoa, ovary and maturation of the ovum, fertilization, cleavage, and formation of primary layers of the embryo. Considerable attention is given to the technique of the subject, and to experimental embryology.

In addition to the above, special courses may be arranged to meet the requirements of individual students, and such courses may include a study of the later stages of the development of the embryo, with special reference to the vertebrates.

FORESTRY

The following courses given in connection with THE FOREST SCHOOL are open to graduate students.

————— :—

67 *Forest Botany.* 2 to 4 hrs. to count as 2 hrs.

The identification of trees and shrubs, their distribution, habit, and uses. Herbaceous and cryptogamic plants will be considered so far as their knowledge may prove useful to a forester.

Professor BREWER :—

68 *Forest Physiography and Meteorology.* 4 hrs. 1st half 2d term.

General conditions necessary to forests ; elementary meteorology ; forests as related to temperature and its range ; to rainfall and its range ; to excesses of weather and climate ; to the mechanical and chemical nature of the soil and ground-water ; to the geological character of the surface ; to the relief-forms of the land ; to other geographical features ; the geographical distribution of forests ; the aspects of forests as related to climate and topography ; and the geological history of forests.

————— :—

69 *Outlines of Forestry.* 3 hrs. 1st half year.

This course is designed to give a comprehensive view of forestry with special reference to its economic aspects. It considers the purpose and scope of forestry, its importance in national economy, the indirect influence of forests, the relation of the State to forests and forestry, the need for forestry and its practice in the United States.

Professor GRAVES :—

70 *Silviculture.* 3 hrs.

Characteristics of forests ; the forests of the world ; forest regions of the United States ; special consideration of trees important in forestry ; methods of conducting silvicultural studies ; methods of reproducing forests ; treatment of forests. Practical forest planting will be taught in the spring by the Assistant Professor.

The following courses given in THE FOREST SCHOOL will be open to graduate students in 1901-1902.

_____ :—

71 *Forest Law.* 1 hr. 1st half 2nd term.

Special consideration of the laws and decisions in the various States with reference to trespass, river driving, breach of contract, damages resulting from forest fires, etc.

Professor GRAVES :—

72 *Forest History.* 1 hr. 1st term, and 1st half 2nd term.

Rise of forestry in foreign countries and in the United States.
Present practice of forestry in different countries.

_____ :—

73 *Forest Technology.* 2 hrs. 1st term, and 1st half 2nd term.

Study of commercial woods in relation to their uses and important characteristics.

VII. MATHEMATICS

JOHN E. CLARK, M.A.	J. WILLARD GIBBS, Ph.D., LL.D.
CHARLES B. RICHARDS, M.A.	EUGENE L. RICHARDS, M.A.
A. JAY DuBOIS, Ph.D.	WILLIAM BEEBE, M.A.
ANDREW W. PHILLIPS, Ph.D.	SAMUEL E. BARNEY, C.E.
JAMES PIERPONT, Ph.D.	PERCY F. SMITH, Ph.D.
GEORGE P. STARKWEATHER, Ph.D.	MILTON B. PORTER, Ph.D.
EDSON F. GALLAUDET, Ph.D.	HERBERT E. HAWKES, B.A.
EDWIN B. WILSON, B.A.	

PURE MATHEMATICS

Professor CLARK :—

- 1 *Determinants, with applications to Geometry and the Theory of Elimination.* 2 hrs. 1st term.
[Wednesday and Saturday, 10.30 A. M.]

- 2 *Differential Equations.* 2 hrs. 2d term.

The short courses in the above subjects are designed especially for the graduate students in the departments of engineering in the Sheffield Scientific School, whose time is mainly occupied with work in those departments.

[Wednesday and Saturday, 10.30 A. M.]

Professor GIBBS :—

- 3 *Vector Analysis.* 3 hrs. 1st term.

Elementary course, in which the simpler problems of geometry, kinematics, and mechanics are treated by vector methods. The matter taught is not entirely unlike that usually given in courses in quaternions, but the method followed is in some respects nearer to Grassmann's than to Hamilton's.

[Monday, Thursday and Friday, 3 P. M.]

- 4 *Advanced Vector Analysis.* 3 hrs. 2d term.

Advanced course, including differentiation with respect to position in space, the theory of the potential and allied functions, and that of linear vector functions. Applications are made to hydrodynamics, to the motion of a rigid body, and to the theory of curvature. This course is especially designed as an introduction to the study of mathematical physics, and is open only to those who have taken the preceding.

5 *Multiple Algebra.* 1 or 2 hrs.

The object of this course is to give some idea of the methods and results of the principal non-arithmetical algebras, especially of the *Ausdehnungslehre* and the algebra of matrices. It is intended for such students as have already some familiarity with the algebra of vectors, derived from the preceding courses or from the study of quaternions.

6 *Electro-Magnetic Theory of Light.* 2 hrs.

This course commences with the general theory of harmonic motion and its representation by complex scalar and vector quantities. The laws of electrodynamics are then applied to the phenomena of the propagation of light in isotropic and aeolotropic media, and its reflection at a surface between two such media, including the case of an absorbent medium, and the dispersion of colors.

In the year 1901-1902, in addition to the courses 3 and 4 in vector analysis, the following may be expected :

7 *Electricity and Magnetism.* 1 hr.

In this course, which is based on Maxwell's theory, the student is taught the use of vector methods in this branch of physics.

[Omitted 1900-1901.]

8 *Thermodynamics and Properties of Matter.* 2 hrs.

This course is a development of the consequences of the two fundamental laws of thermodynamics, as affording a general theory of physical and chemical equilibrium, and as giving shape to the investigation of the sensible properties of matter.

[Omitted 1900-1901.]

Professor BEEBE :—

9 *Celestial Mechanics.* 3 hrs.

Development of formulae and numerical calculations for determining the parabolic orbit of a comet from three observations.

Computation of an ephemeris and reduction of observations for comparison with the ephemeris.

The course may be carried on through a second year to computation of elliptic orbits and the discussion of perturbations.

Professor PIERPONT :—

- 10** *Finite Groups—Galois Theory.* 3 hrs. 2d half year.

This course falls into two parts ; one part treats of the general theory of finite groups, in particular substitution groups and the groups of the regular bodies ; the other is their application to the solution of algebraic equations. The course, while important in itself, will be found helpful as a preparation to the theories of Lie on continuous groups and their applications to higher geometry and differential equations.

- 11** *Differential Equations and Function Theory.* 3 hrs.

Topics are : definite integrals, Gamma functions, elements of the function theory of a complex variable, elliptic functions with application to physics and geometry, differential equations, particularly the equations of mathematical physics.

- 12** *Theory of Numbers.* 3 hrs. 1st half year.

The more elementary properties of whole numbers and binary quadratic forms will be treated. The present state of certain higher theories, as the theory of groups, the elliptic and automorphic functions, the theory of numerical algebraical bodies, etc., makes an elementary course, as here proposed, quite essential.

Professor PERCY F. SMITH :—

- 13** *Theory of Transformations of Space.* 2 hrs. 1st term.

Elementary course, treating of displacements, inversions, collineations and correlations.

- 14** *Differential Geometry.* 2 hrs. 2d term.

Treats of the more advanced parts of the applications of the calculus to the theory of twisted curves and surfaces.

- 15** *Continuous Groups of Transformations.* 2 hrs.

An introductory course to the more abstract parts of Lie's theory.

Dr. PORTER :—

- *16** *Advanced Calculus.* 3 hrs.

This is a continuation of the first course in calculus, and in turn leads up to courses in higher analysis and geometry. More

advanced parts of the calculus are here treated; the complex variable is introduced, and much attention is given to the application of the calculus to the theory of twisted curves and surfaces.

Books of Reference: Byerly's *Differential and Integral Calculus*, 2 vols.; Appell's *Éléments d'analyse mathématique*; Czuber, *Differential und Integral Rechnung*; Serret-Bohlmann, *Differential und Integral Rechnung*; C. Jordan, *Cours d'Analyse*.

17 *Linear Differential Equations.* 2 hrs.

This course will deal mainly with functions defined by linear differential equations, with rational coefficients, whose singular points are regular. Especial attention will be devoted to those equations defining the functions most useful in mathematical physics and the hypergeometric functions will be studied in as much detail as the time will admit.

Mr. HAWKES :—

18 *Higher Algebra.* 3 hrs. 1st half year.

This course treats of those algebraic methods and facts which the student will find indispensable for his further progress in pure and applied mathematics.

The topics treated are symmetric functions, substitutions, determinants, solution of linear systems of equations, roots of unity, elimination, resultants, discriminants, invariants, and the numerical solution of algebraic and transcendental equations.

Books of reference: Burnside and Panton, *Theory of Equations*; Carnoy, *Algèbre Supérieure*; Weber, *Lehrbuch der Algebra*.

Mr. WILSON :—

19 *Analytical Mechanics.* 3 hrs. 2nd half year.

The object of this course is to introduce the student to the more important facts of statics and dynamics, making use of the calculus. To develop the student's mechanical intuition, a large variety of problems will be given.

Books of reference; Ziwet's *Mechanics*; Williamson's *Dynamics*; Voigt, *Mechanik*; Appell's *Traité de Mécanique rationnelle*.

20 *The Theory of Plane Curves.* 3 hrs. 1st half year.

In the first few lectures the general theory will be developed and applied to a cursory treatment of cubics and biquadratics.

This will be followed by Cremona transformations. The deficiency and moduli will be shown to be absolute invariants for such transformations and Plücker's equations will be established. Modern methods will be used and all possible rigor applied.

Before entering this course the student should have had a thorough course in Analytic Geometry and Algebra.

This course leads up to "Abelian Integrals," and forms a contrast to "Projective Invariant-theory and its Geometric Applications," which will probably be given in 1901-1902.

Dr. STARKWEATHER :—

21 *Mechanics.* 2 hrs.

The course consists of lectures and seminary work, a good knowledge of the Calculus and a previous course in elementary mechanics, especially the problems thereof, being assumed. Special attention is given to the kinematics of a rigid body and of plane kinematic chains with one degree of freedom. In dynamics the fundamental conceptions of force and mass receive particular consideration, and special effort is made to give the student a clear sense of the importance and applicability of the principles of work and energy, momentum, and moment of momentum, which are considered successively for the material particle, the rigid body and a system of bodies.

Dr. GALLAUDET :— 3 hrs.

22 *Elementary Mathematical Physics.*

Open to those who have taken Elementary Physics and Calculus.

First term, Heat with especial attention to thermodynamics.

First half of second term, general subject of Electricity and Magnetism.

Second half of second term, Wave Motions and Light.

READING CLUB IN FRENCH AND GERMAN MATHEMATICS.

The club is in charge of instructors in turn, and will hold its meetings once or twice weekly at hours to be arranged later.

Various specimens of mathematical French and German will be read. The object is to give students an opportunity to become familiar with mathematical technical terms and to acquire an ability to read mathematical literature rapidly at sight.

This does not count as a course. Attendance is voluntary but warmly recommended to all.

APPLIED MATHEMATICS

Professor C. B. RICHARDS :—

MECHANICAL ENGINEERING.

This course, arranged for candidates for the degree of Mechanical Engineer, is open also to special graduate students, who are allowed in certain cases to take selected parts. The leading topics are :

22 *Applied Mechanics.*

Including graphical methods in applied kinematics, and in the investigation of mechanisms working with friction ; graphical determinations of the accelerations of the moving parts of machines ; the strength of materials as affecting the proportions of machine elements ; the applications of the principles of hydraulics to the construction and working of turbines and pumps.

23 *Thermodynamics.*

Applications to the compound steam-engine, air compressors and compressed air motors, engines worked by volatile vapors, refrigerating machines, the warming and ventilation of buildings.

24 *Machine-Design.*

In this course the student is engaged in practical exercises under the guidance of the professor in charge, investigating machinery, the designing and making of working-drawings, specifications, and estimates for machines and manufacturing plant. In addition to the study of machines in general, one of the following subjects (at the option of the student) receives particular attention : (a) Marine engineering ; (b) Railway machinery ; (c) Pumping machinery and plant ; (d) Machinery and plant for manufacturing. The student is required to make complete drawings, from new designs, of at least one important piece of machinery under one of these subjects. A compound marine engine and boilers, a locomotive, a turbine driving centrifugal pumps, a blowing-engine for an iron furnace, are examples.

Candidates for the degree of Mechanical Engineer are required to take also a course in mathematics, to sustain a final examination, and to present a satisfactory thesis on a subject approved by the professor in charge of the course.

This course offers instruction for advanced graduate students as well as for those students who may be regular candidates for the degree of Civil Engineer. It embraces the following topics:

- Including the application of kinematics, statics, and kinetics to engineering problems.**

Including the strength and properties of materials, construction and design of bridges, roofs, foundations, retaining walls, dams and embankments, masonry arches, sewerage and drainage, improvement of rivers and harbors, specifications and contracts, and the preparation of designs and working-drawings.

Candidates for the degree of Civil Engineer are required to take, in addition, a selected course in mathematics and practical astronomy, and when the facilities in the physical laboratory permit, a course of laboratory work under the superintendence of the professors in charge. They are also required to sustain a final examination, and each to present a satisfactory thesis, accompanied by appropriate designs, upon a subject approved by the professor in charge of the course.

To special students, not candidates for the degree of Civil Engineer, a selection of special topics is allowed.

Professor E. L. RICHARDS:—

- 3 hrs., 1st half year.

The subjects treated will be the deviation of the compass, and corrections for the same by amplitude, by altitude-azimuth, and by time-azimuth ; latitude by double altitude ; latitude and longitude from observations at the same time, including Sumner's Method. The practical part of the course will include the use of charts, the use of the sextant, and the use of the Nautical Almanac. Numerous examples illustrating all the subjects treated will be given, with the reduction of observations made by students in the course.

[Omitted in 1900-1901.]

Professor BEEBE :—

*28 *Surveying.* 3 hrs., 2d half year.

One or sometimes two hours per week are given to recitations. The other exercises are in field- or office-work during the afternoons, each exercise occupying not less than two hours.

Field-work : The ordinary operations of land-surveying, leveling, and elementary topography, involving the use of the chain, compass, surveyor's level, transit and plane table.

Office-Work : Plotting surveys from the field notes ; determination of areas from the map and by numerical calculation ; map-drawing, plane and topographical ; examination of instrumental errors.

Text-book : Johnson's *Surveying*.

The course in surveying is open to those who take Navigation and Nautical Astronomy, as well as those who take Spherical Trigonometry.

[Wednesday, 10.30 A. M., Monday and Friday, 2 P. M., A, O.]

*29 *Descriptive Astronomy.* 3 hrs. 1st half year.

Intended principally for the study of topics connected with the historical and physical side of astronomy. Only so much mathematical work is introduced as is essential to an understanding of such topics. Text-book : Young's *Elements of Astronomy*.

Opportunity will be given for study of constellations and observation with the telescope.

[Monday, Wednesday, and Friday, 10.30 A. M.]

*30 *Practical Astronomy.* 3 hrs. 2d half year.

This course is open only to those who have taken course 260. It consists of observatory work with astronomical transit and chronograph for determination of sidereal and standard time, and with sextant and theodolite for determination of latitude and azimuth, numerical computations for reduction of observations, derivation of formulae, and recitations from Loomis's *Practical Astronomy*.

[Not given in 1900-1901.]

Assistant Professor BARNEY :—

[31 *Geodesy and Practical Astronomy.* 2d term.

Methods of observation, based on measurements, triangulation field-work ; theory of least squares, adjustment of observations,

and computation of geodetic latitudes, longitudes, and azimuth. The study of practical astronomy embraces the use of the sextant and engineer's transit with solar attachment for determining time, latitude, azimuth, and needle variation.

Not given in 1900-1901.]

32 *Railway Surveying.* Three weeks in September.

A preliminary line for a railroad is run out, and from the contour map so obtained a final line is located, staked out, and cross-sectioned, and estimates are made for construction. The field-work begins the first Monday in September and occupies the entire time for three weeks.

33 *Sanitary Engineering. Water Supply.* 1st term.

Methods of collecting and distributing, of judging its quality and effect on the public health, sources of contamination and methods of filtration.

34 *Design and Construction of Sewers and Sewage Disposal.* 2d term.

Treated both from an engineering and sanitary point of view.

THE MATHEMATICAL CLUB holds fortnightly meetings, at which are presented sketches of the history of mathematical development and inventions, summaries of articles in current periodicals and other publications on pure and applied mathematics, descriptions and models of new apparatus, together with the original investigations of the instructors and advanced students in this department of study.

A MATHEMATICAL SEMINARY ROOM has been fitted up at 90 High street, and is provided with the nucleus of a Departmental Library for the use of the advanced students in Mathematics.

THE ENGINEERS' CLUB meets monthly in North Sheffield Hall for the reading and discussion of papers on subjects relating to the different branches of engineering.

Lectures are occasionally given before the club by professional experts.

VIII. THE FINE ARTS

JOHN F. WEIR, N.A., M.A.

JOHN H. NIEMEYER, M.A.

Professor WEIR :—

1 *Technical Course in Painting.*

Only those students who have been qualified by a course in Drawing can enter the course in Painting. The hours for students of the Graduate School must be determined individually. The charge for instruction, entitling the student to all the privileges of the School, is \$25 for the college year.

2 *Course in Modeling.*

The course consists in modeling from the antique and from the living figure and is supplemented by the lectures given in course 1.

Professor NIEMEYER :—

4 *Course in Drawing.*

Students in the Graduate School may pursue the course in Drawing in the Art School without restriction as to time. The terms will be \$25 for the college year, entitling the students to all the privileges of the School as arranged for students from other departments of the University.

IX. MUSIC

HORATIO W. PARKER, M.A. SAMUEL S. SANFORD, M.A.
HARRY B. JEPSON, B.A., MUS.B. ISIDOR TROOSTWYK.

Professor PARKER :—

***1 *Harmony.* 2 hrs.**

The study of chords, their construction, relations, and progressions.

This course covers the following subjects :

Intervals,—the measurement of distance from one tone to another ; triads of the major and minor scales, and their inversions ; seventh chords, primary and secondary, with their inversions and resolutions ; modulations ; chromatically altered notes ; suspensions ; organ point ; passing and changing notes ; harmonization of a given melody ; harmony in two, three, and five parts ; simple instrumental accompaniments.

The work is principally the writing of exercises from figured basses. The exercises will be corrected in the class-room with explanations and illustrations.

Jadassohn's *Harmony* (Breitkoff & Härtel, New York and Leipzig) is used as text-book.

***2 *Counterpoint.* 2 hrs.**

A thorough knowledge of Harmony is required of students in this course.

The work is the harmonizing and supplying melodious additional voices to choral and other melodies used as *Canti Firmi*.

The different orders of Counterpoint in two, three, and four voices ; also double counterpoint, and more or less free imitative writing.

Students in this course are encouraged to try the simpler forms of free composition. No text-book is used.

[Tuesday and Thursday, 2 P. M., 3 Tr.]

***3 *Strict Composition.* 2 hrs.**

The more severe kinds of composition form the basis of work in this course.

Harmony in Five and more parts ; Threefold and Fourfold Counterpoint ; Four- and Three-part Fugues for voices or for instruments ; Canons of various kinds, with or without accompaniment.

[Tuesday and Thursday, 2 P. M., 3 Tr.]

4 *The History of Music.* 1 hr.

Lectures on the development of music from its earliest stages. Practical illustrations of the lectures on musical form are given in the class-room.

[Wednesday, 5 P. M.]

*5 *Instrumentation.* 2 hrs.

Lectures are given on the nature, compass, tone-color, and other characteristics of all the instruments of the modern orchestra, with illustrations of their use by great composers.

Exercises in the practical orchestration of short pieces from the works of classic and modern composers, in analyzing, reading and playing from orchestral scores, beginning with Haydn and Mozart Symphonies, and embracing modern works of various kinds.

[Wednesday and Friday, 3 P. M.]

6 *Free Composition.* 2 hrs.

Several of the smaller forms of free instrumental and vocal music are composed by the students, such as part-songs for male, female, or mixed voices, and pieces of different sorts for the piano and other instruments.

At the close of the year the student is required to produce an extended work, probably in sonata form.

[Wednesday and Friday, 2 P. M.]

Professor SANFORD, Mr. JEPSON, and Mr. TROOSTWYK :—

7 *Practical Music.*

Instruction is given in Piano-, Organ-, and Violin-playing to a limited number of students. Fees range from \$50.00 to \$150.00 for the college year.

Each student of the piano-forte receives individual instruction, under the supervision of Professor Sanford, who will in person instruct a limited number of advanced students in the higher branches of the art, particularly in *ensemble* and concert-playing. (No student is admitted to a course in practical music who has not been admitted to one of the theoretical courses.)

Students of organ-playing receive personal instruction from Prof. Jepson and of violin-playing from Mr. Troostwyk.

X. PHYSICAL EDUCATION

JAY W. SEAVER, M.A., M.D. WILLIAM G. ANDERSON, M.D.

Dr. SEAVER and Dr. ANDERSON :—

Physiology and Gymnastics. 2 hrs.

This course is designed for those who intend to teach gymnastics or to direct departments of physical education in institutions of learning. The work comes under two general branches as follows :

I *Physiology.*

This work consists of one recitation or lecture a week with Dr. Seaver, during the year. The first term is devoted to elementary physiology. The second term is devoted to human physiology ; special attention being given to a study of the circulation, respiration, digestion, and excretion. The hygienic importance of these topics is carefully studied. The third term is given to a study of sanitary science. Collateral reading will be required during the third term.

Dr. Seaver may be consulted at the Gymnasium from 9.30 to 10.30 A. M. daily.

[Thursday, 7 P. M., University Gymnasium.]

2 *Principles and Practice of Gymnastics.*

Under this head will be discussed by Dr. Anderson (*a*) the scientific basis of physical training ; (*b*) history of gymnastics and growth of the various systems ; (*c*) means employed, such as apparatus and appliances ; (*d*) physical examinations and measurements ; (*e*) pedagogy of gymnastics. Required textbook, Anderson's *Gymnastic Terminology and Methods of Teaching Gymnastics*.

Members of the class will be called upon to arrange exercises for other classes, to classify movements for overcoming common physical defects, and to do practice work in teaching gymnastics.

Dr. Anderson may be consulted at the Gymnasium from 4 to 6 P. M.

[Monday and Thursday, 11.30 A. M., University Gymnasium.]

GRADUATE SCHOOL

LIST OF STUDENTS

IN ATTENDANCE 1899-1900

WITH THEIR MAJOR SUBJECT OF STUDY

[Students marked "A." are pursuing courses of study in absence under the direction of the Faculty for the degree of Master of Arts, Mechanical Engineer, or Civil Engineer.]

Elizabeth Frances Abbe, M.A. Wellesley College 1888	<i>Dorchester, Mass.</i>	37 Howe st. Classics
Ellen Cornelia Abbott, B.A. Vassar College 1892	<i>West Haven, Conn.</i>	West Haven German
Harriet Elizabeth Abbott, B.A. Vassar College 1895	<i>Waterbury, Conn.</i>	Waterbury Botany
Clarence Alfred Alexander, LL.B. Yale University 1899	<i>Dayton, O.</i>	333 York st. Political and Social Science
Robbins Battell Anderson, B.A. Yale University 1899	<i>Duluth, Minn.</i>	A. English
William Gilbert Anderson, M.D. Western Reserve Univ. 1883	<i>Cleveland, O.</i>	120 College st. Philosophy
Henry Cotheal Andrews, B.A. Yale University 1899	<i>Fishkill, N. Y.</i>	217 York st. History
William Lucius Armstrong, B.A. Yale University 1889, M.D. Columbia Univ. 1893	<i>New York City</i>	A. English
Kan-Ichi Asakawa, B.L. Waseda College, Japan 1895, Dartmouth College 1899	<i>Fukushima, Japan</i>	105 Park st. History
Martha Austin, B.S. Smith College 1892, Ph.D. Yale Univ. 1898	<i>Easthampton, Mass.</i>	58 Grove st. Chemistry
Nathaniel Terry Bacon, Ph.D. Yale University 1870	<i>Peacedale, R. I.</i>	Peacedale Electro Physics and Chemistry

Thomas Nelson Baker, B.A. Boston University 1893, B.D. Yale University 1896	Eastville, Va.	35 Foote st. Philosophy
*DeForest Baldwin, B.A. Yale University 1899	New Haven, Conn.	260 Crown st. Chemistry
Cecil Kittredge Bancroft, B.A. Yale University 1891	Andover, Mass.	213 D. Classics
Amy Louise Barbour, B.A. Smith College 1891	Hartford, Conn.	70 Whalley av. Classics
Franklin Whitehead Barker, B.A. University of New Brunswick 1892, Bangor Seminary 1895	Harvey, N. B.	46 E. D. Philosophy
James Foote Barnett, B.A. Yale University 1891	Grand Rapids, Mich.	A. History
Joseph Barrell, M.S. Lehigh University 1897	New Providence, N. J.	373 Crown st. Natural Science
Samuel Eliot Bassett, B.A. Yale University 1898	New Haven, Conn.	41 Lynwood st. Classics
Birdie Iva Beals, PH.B. Univ. of Washington 1898	Seattle, Wash.	166 York st. English
Alling Prudden Beardsley, B.A. Wesleyan University 1898	Derby, Conn.	Derby Chemistry
Clarence Wyatt Bispham, B.A. Amherst College 1888, M.A. Amherst College 1891	New Haven, Conn.	284 Orange st. History
John Joseph Blythe, M.A. Ohio Wesleyan University 1897, B.D. Wes. Theol. Coll., Montreal 1899	Montreal, Canada.	75 W. D. Biblical Literature
Malcom Booth, PH.B. Yale University 1879	New Haven, Conn.	12 Gill st. Mathematics
Thomas Contee Bowie, PH.B. Univ. of N. Carolina 1899	Venus, N. C.	96 S. M. Political and Social Science
Mary Cleaveland Bradford, PH.B. Mt. Holyoke College 1871, Syracuse University 1887	Rutland, Vt.	70 Howe st. Latin
Walter Minor Bradley, PH.B. Yale University 1899	New Haven, Conn.	1346 Chapel st. Chemistry
Mercy Agnes Brann, B.A. Colby University 1897	Dover, Me.	446 Elm st. English
William Edwin Breckenridge, B.A. Yale University 1893	Montclair, N. J.	A. Mathematics

* Deceased.

Halbert Hains Britan, B.A. Hanover College 1898	<i>Hanover, Ind.</i> 342 George st. Philosophy
Wilton Everett Britton, B.S. New Hampshire College Agric. 1893	<i>New Haven, Conn.</i> 1317 Boulevard Botany
James Ansel Brooks, PH.B. Yale University 1898	<i>Derby, Conn.</i> Derby Mechanics
Ernest William Brown, PH.B. Yale University 1897	<i>New Haven, Conn.</i> 106 Sherman av. Biology
William Adams Brown, B.A. Yale University 1886, M.A. Yale University 1888	<i>New York City</i> New York Philosophy
Abraham Royer Brubacher, B.A. Yale University 1897	<i>Shaefferstown, Pa.</i> 20 Carmel st. Classics
Arthur Bumstead, B.A. Yale University 1895	<i>Roxbury, Mass.</i> 54 E. D. Biblical Literature
Frank Scott Bunnell, B.A. Yale University 1894	<i>Stratford, Conn.</i> 31 Whalley av. Classics
Otis Gridley Bunnell, PH.B. Yale University 1892	<i>Burlington, Conn.</i> 92 York sq. Romance Languages
Eugene Watson Burlingame, B.A. Yale University 1898	<i>Albany, N. Y.</i> A. Greek
Katherine Jeannette Bush	<i>New Haven, Conn.</i> 133 Howe st. Natural Science
Harold Edgar Buttrick, B.A. Yale University 1894	<i>Brooklyn, N. Y.</i> A. English
Henry Seidel Canby, PH.B. Yale University 1899	<i>Wilmington, Del.</i> 86 Wall st. History and Social Science
George Peabody Chandler, B.A. Yale University 1895	<i>Germantown, Pa.</i> 46 College st. English
Joseph Hayes Chandler, B.A. Yale University 1877	<i>St. Paul, Minn.</i> 343 Quinpiac st. Biblical Literature
William Woods Chandler, B.A. Yale University 1896	<i>New Haven, Conn.</i> 31 High st. Music
George Millet Chase, B.A. Bates College 1893	<i>Lewiston, Me.</i> 10 Ashmun st. Classics
William Churchill, B.A. Yale University 1897	<i>New Britain, Conn.</i> 100 W. D. Philosophy
Charles Upson Clark, B.A. Yale University 1897	<i>Brooklyn, N. Y.</i> Rome, Italy Classics

Marion Warner Clark, B.A. Mt. Holyoke College 1890	Saybrook, Conn. Biology	78 Lake pl.
Thomas Ludlow Clarke, B.A. Yale University 1897	New York City Economics	A.
Herdman Fitzgerald Cleland, B.A. Oberlin College 1894	Pierce, Nebr. Natural Science	55 N. S. H.
Henry Sloane Coffin, B.A. Yale University 1897	New York City Philosophy and English	A.
Hamlet Paul Collins, B.S. Rutgers College 1899	New Brunswick, N. J. Chemical Physics	73 Lake pl.
Winfield Hazlitt Collins, B.A. Western Maryland College 1894	Reeds Grove, Md. History	25 High st.
Molton Avery Colton, B.A. Yale University 1898	New Haven, Conn. Romance Languages	90 S. M.
Elizabeth Mary Comstock, B.A. Indiana State Univ. 1892	Richmond, Ind. English	74 Lake pl.
Lewis Roberts Conklin, B.A. Yale University 1896	Monroe, N. Y. English	A.
Charles Montague Cooke, Jr., B.A. Yale University 1897	Honolulu, H. I. Biology	112 College st.
Alberta Linton Corbin, B.A. Univ. of Kansas 1893	Lawrence, Kansas German	89 Whalley av.
William Lee Corbin, B.A. Amherst College 1896	Norfolk, Conn. English	116 W. D.
Jane Coughlin, PH.B. Wesleyan Col. 1897	Bridgeport, Conn. English	Bridgeport
James Judson Crossley, M.A. State University of Iowa 1897	Winterset, Iowa Social Science	128 Howe st.
Charles Edward Curtis, PH.B. Yale University 1888	New Haven, Conn. Political and Social Science	254 Prospect st.
Eleanor Evelyn Cutler, B.A. Smith College 1892	New Haven, Conn. English	284 Orange st.
George Barton Cutten, B.A. Yale University 1897	Amherst, Nova Scotia Philosophy	80 First st.
Moreau Delano, B.A. Yale University 1898	New York City English	A.
Elizabeth Street Dickerman, PH.D. Yale University 1896	New Haven, Conn. Mathematics	140 Cottage st.

Sherwood Owen Dickerman, B.A.	<i>New Haven, Conn.</i>	140 Cottage st.	
Yale University 1896	Classics		
Louise Dodge	<i>Danvers, Mass.</i>	77 Grove st.	
	Classics		
George Francis Dominick, Jr., B.A.	<i>New York City</i>		A.
Yale University 1894	English		
Richard Julian Donnelly, PH.B.	<i>Oxford, N. Y.</i>	149 College st.	
Yale University 1899	Chemistry		
Edgar Selah Downs, B.A.	<i>Southington, Conn.</i>	128 Howe st.	
Yale University 1898	Physics		
Mary Dunham, B.A.	<i>North Richmond, Ind.</i>	74 Lake pl.	
Indiana University 1898	Classics		
Guy King Dustin, PH.B.	<i>Hartford, Conn.</i>	51 Prospect st.	
Yale University 1899	Chemistry		
John Eastlund, B.S.	<i>Lindsborg, Kansas</i>	16 Hughes pl.	
Bethany College 1898	English, Latin		
Jay Glover Eldridge, B.A.	<i>Penfield, N. Y.</i>	102 N.	
Yale University 1896, M.A. Yale University 1899	German		
Hollon Augustine Farr, B.A.	<i>Athol, Mass.</i>	170 F.	
Yale University 1896	German		
Horace Jewell Fenton, B.A.	<i>Willimantic, Conn.</i>	90 Park st.	
Yale University 1899	English		
George Willis Field, B.A.	<i>New York City</i>		A.
Yale University 1899	English		
John Francis Flynn, B.A.	<i>Meriden, Conn.</i>	251 Crown st.	
Yale University 1899	Latin		
Joseph Fogelberg, B.A.	<i>Lindsborg, Kans.</i>	59 Prospect st.	
Bethany Col. 1899	Classics		
Emily Howard Foley, B.A.	<i>St. Louis, Mo.</i>	84 Wall st.	
Wellesley College 1893	English		
William Ebenezer Ford, Jr., PH.B.	<i>New Haven, Conn.</i>	16 Lynwood st.	
Yale University 1899	Natural and Physical Science		
Allyn King Foster, TH.M.	<i>New Haven, Conn.</i>	108 High st.	
So. Baptist Theol. Sem. 1894	English		
Isabella Graham Foster, B.A.	<i>New Haven, Conn.</i>	220 Orange st.	
Vassar College 1899	Classics		
Charles Root Fowler, B.A.	<i>New Haven, Conn.</i>	308 Humphrey st.	
Yale University 1899	Music		

Frederic Henry Beecher Fowler, PH.B.	<i>New Haven, Conn.</i>	
Yale University 1899	308 Humphrey st.	Engineering
John Marshall Gaines, B.A.	<i>New Haven, Conn.</i>	530 P.
Yale University 1896	Political and Social Science	
Arthur Sullivan Gale, B.A.	<i>Jacksonville, Fla.</i>	123 W. D.
Yale University 1899	Mathematics	
*Harry Courtland Gause, PH.B.	<i>Wilmington, Del.</i>	86 Wall st.
Yale University 1899	Economics	
Arthur James Gammack, M.A.	<i>New Haven, Conn.</i>	228 Whalley av.
Trinity College of Toronto 1891	Political and Social Science	
Silas Wright Geis, B.L.	<i>Fresno, Cal.</i>	83 Sachus st.
Univ. of California 1898	Political and Social Science	
Karl Frederick Geiser, PH.B.	<i>Fayette, Iowa</i>	27 Sylvan av.
Upper Iowa University 1893	History	
Walter Gilliam, B.A.	<i>Bonham, Tex.</i>	25 High st.
Natl. Normal Univ. 1899	Political and Social Science	
George Wilbur Fiske Gillette, PH.B.	<i>New Haven, Conn.</i>	A.
Yale University 1896	Engineering	
Julian Henry Goodman, PH.B.	<i>New Haven, Conn.</i>	11 Home pl.
Yale University 1899	Biology	
William Anthony Granville, PH.D.	<i>New Haven, Conn.</i>	7½ Eld st.
Yale University 1897	Mathematics	
Thomas Ezekiel Gravatt, B.S.	<i>Clarksburgh, N. J.</i>	73 Lake pl.
Rutgers College 1897	Mathematics	
John Lewis Gregory, PH.B.	<i>Erie, Pa.</i>	A.
Yale University 1897	Mathematics	
Matthew Griswold, Jr., PH.B.	<i>Erie, Pa.</i>	A.
Yale University 1888	Engineering	
Grace Guthrie, B.A.	<i>Lewisburg, Pa.</i>	33 Wall st.
Bucknell University 1894	Classics	
Francis Jenks Hall,	<i>Saltsburg, Pa.</i>	A.
Yale University 1899	Biblical Literature	
Robert William Hall, PH.B.	<i>Cambridge, Mass.</i>	48 N. S. H.
Yale University 1895,	Biology	
M.A. Harvard University 1898		
George Arthur Hanford, B.A.	<i>Syracuse, N. Y.</i>	276 Elm st.
Yale University 1898	Biology	
Henry Lee Hargrove, B.A.	<i>Waco, Tex.</i>	84 Bishop st.
Univ. of Nashville 1891,	English	
M.A. Univ. of Nashville 1892		

* Deceased.

Josiah Harmar, PH.B. Yale University 1892	Philadelphia, Pa. Engineering	A.
Mattie Anstice Harris, M.A. Lincoln College (Ill.) 1894, PH.D. Yale University 1897	New York City English	22 Lynwood st.
Francis Burton Harrison, B.A. Yale University 1895	New York City English	A.
Frederick Brown Harrison, PH.B. Yale University 1899	New Haven, Conn. English	83 Grove st.
Carl Axel Harström, M.A. Hobart College 1886	Norwalk, Conn. Classics	Norwalk
Joseph Hall Hart, B.A. Yale University 1898	Cincinnati, O. Physics	43 College st.
Charles Montgomery Hathaway, Jr., B.A. Yale University 1899	Olyphant, Pa. English	36 E. D.
Herbert Edwin Hawkes, B.A. Yale University 1896	New Haven, Conn. Mathematics	391 Edgewood av.
Chauncey Jeddie Hawkins, B.A. University of the Pacific 1896, B.D. Yale University 1899	Suisun, Cal. Biblical Literature	51 Avon st.
William Hazen, B.A. Univ. of Vermont 1893	Sherburne, Vt. Biblical Literature	103 W. D.
William Wilson Heaton, B.A. Yale University 1896	New York City Economics	A.
William Milton Hess, B.A. Yale University 1896, PH.D. Yale University 1899	Philadelphia, Pa. Psychology	333 York st.
Lawrence Hsley Hewes, B.S. Dartmouth College 1898	Braintree, Mass. Mathematics	105 Park st.
Mary Cornwall Hewitt, B.A. Smith College 1897	New Haven, Conn. History	65 Dixwell av.
Clara Maria Hitchcock, PH.B. University of Chicago 1897	Michigan City, Ind. Philosophy	34 Hillhouse av.
James Ladd Hitchcock, PH.B. Yale University 1897	Buffalo, N. Y. Mathematical Physics	A.
Robert Reynolds Hitt, B.A. Yale University 1898	Washington, D. C. English	A.
Richard Thayer Holbrook, B.A. Yale University 1893	Yonkers, N. Y. Romance Languages	170 F.

Edwin Knight Holden, B.A. University of Wisconsin 1882, A.D. Yale University 1886	Bridgeport, Conn. Social Science	Bridgeport
Frederick Augustus Holden, B.A. Amherst College 1878	Morris, Conn. Biblical Literature	Morris
George Clay Hollister, B.A. Yale University 1896	New York City Economics	A.
Frazer Hood, B.A. Southwestern Presbyterian University 1896	Tupelo, Miss. Philosophy	47 Lake pl.
Donald Russell Hooker, B.A. Yale University 1899	New Haven, Conn. Biology	436 Orange st.
Gerard Beekman Hoppin, B.A. Yale University 1891	New York City English	A.
Clara Marvin Hubbell, B.A. Smith College 1887	Detroit, Mich. English	409 Orange st.
Grace Wakeman Hubbell, PH.B. Oberlin College 1894	New York City English	409 Orange st.
Robert Ernest Hume, B.A. Yale University 1898	Ahmednagar, India Philosophy	24 Home pl.
Agnes Hunt, B.A. Smith College 1897	Manchester, N. H. History	83 Grove st.
Lola LaMotte Iddings, B.A. Vassar College 1889	Orange, N. J. English	Orange
Howard Maxwell Ingham, PH.B. Yale University 1897	Philadelphia, Pa. Engineering	A.
William Julius Edward Jente, B.A. Yale University 1897	New Haven, Conn. German	97 Bristol st.
Frederic Blair Johnson, B.A. Yale University 1896	Boston, Mass. History	A.
Treat Baldwin Johnson, PH.B. Yale University 1898	Bethany, Conn. Chemistry	141 College st.
William Smythe Johnson, M.A. Ouachita Bapt. College 1895, PH.D. Yale University 1899	Arkadelphia, Ark. Psychology	47 Lake pl.
Edward Clinton Jones, B.A. Yale University 1895	New Haven, Conn. Philosophy	84 William st.
Rivera Harding Jordan, B.A. Yale University 1893	St. Joseph, Mo. English	A.
Tyjiichi Kairiyama, PH.B. Cornell University 1898	Yokohama, Japan Philosophy	49 E. D.

- | | |
|---|---|
| Jiroku Kawabe
Doshisha University 1893 | Kyoto, Japan
115 Dwight st.
Philosophy |
| Alfred Sewell Kedzie, PH.B.
Adrian College 1891,
B.A. Adrian College 1893 | New Haven, Conn.
495 Elm st.
Latin |
| Albert Galloway Keller, B.A.
Yale University 1896,
PH.D. Yale University 1899 | Milford, Conn. 270 Edgewood av.
Political and Social Science |
| George Dwight Kellogg, B.A.
Yale University 1895,
PH.D. Yale University 1898 | Cambridge, Mass.
Rome, Italy
Latin |
| Margaret Dutton Kellum, B.A.
Bryn Mawr College 1892 | Baltimore, Md. 35 Lynwood st.
English |
| Albert Emmett Kent, B.A.
Yale University 1897 | New York City
A.
German |
| Yetaro Kinoshita, B.A.
Hiram College 1899 | Akita, Japan
383 George st.
Political and Social Science |
| Tozaburo Kudo, M.A.
De Pauw University 1896 | Tokyo, Japan
99 W. D.
Philosophy |
| Howard La Field, B.A.
Yale University 1891 | Delafield, Wisc.
A.
German |
| Joshua Larson, B.A.
Augustana College 1889,
M.A. Yale University 1899 | Altona, Ill.
149 St. John st.
Mathematics |
| David Denison Lambert, B.A.
Yale University 1886,
M.A. Yale University 1888 | New Haven, Conn. 359 Howard av.
History |
| Mabelle Alpina Land, B.A.
University of Wyoming 1899 | Laramie, Wyoming 379 Crown st.
English |
| Edward Herman Lay, B.A.
Yale University 1894 | New London, Conn.
A.
Mathematics |
| Annie Maria Leonard, B.A.
Wellesley College 1895 | Taunton, Mass. 30 Academy st.
English |
| Edwin Hoyt Lockwood, M.E.
Yale University 1892 | New Canaan, Conn. 55 Prospect st.
Mathematics |
| Frederick Bliss Luquiens, B.A.
Yale University 1897 | New Haven, Conn. 201 Bishop st.
Romance Languages |
| Adam Ruth Lutz, B.A.
Franklin and Marshall Coll. 1896 | Strasburg, Pa.
121 W. D.
Biblical Literature |
| Cloyd North McAllister, B.A.
Yale University 1892 | St. Joseph, Mo. 33 Lake pl.
Philosophy |

George Grant MacCurdy, B.A. Harvard University 1893, M.A. Harvard University 1894	<i>New Haven, Conn.</i>	33 Wall st. Natural Science
Theodore Dwight McDonald, B.A. Yale University 1897	<i>New York City</i>	A. English
Mary Elizabeth MacLean, PH.B. University of California 1889	<i>Oakland, Cal.</i>	210 Prospect st. English.
Winfield Scott Manship, B.A. Wesleyan University 1886, S.D. Yale University 1889	<i>S. Meriden, Conn.</i>	S. Meriden Philosophy
Milton Mozart Marble, B.A. Harvard University 1889	<i>New Haven, Conn.</i>	19 Beers st. Mathematics
William Crosby Marshall, M.E. Yale University 1894	<i>New Haven, Conn.</i>	355 Willow st. Engineering
Frederic Huntington Mathison, B.A. Yale University 1896	<i>Shelton, Conn.</i>	Shelton. Philosophy
Sogo Matsumoto Keio-gijiku College 1897	<i>Tsu Ise, Japan</i>	24 Court st. History
Matatara Matsumoto, B.A. Imperial University of Japan 1893, PH.D. Yale University 1899	<i>Tokyo, Japan</i>	201 Bishop st. Psychology
Harriet Anna Merrill, B.A. Wellesley College 1898	<i>New Haven, Conn.</i>	115 York st. History
Edward DeWitt Merriman, B.A. Yale University 1872	<i>New Haven, Conn.</i>	154 Elm st. History
Alfred Kindred Merritt, B.A. Yale University 1893	<i>Brainerd, Minn.</i>	267 L. English
Kumazo Mikami, B.D. Trinity College, Japan, 1890	<i>Tokyo, Japan</i>	6 Trumbull st. Political and Social Science
Robert Hume Miller, B.A. Yale University 1897	<i>New Haven, Conn.</i>	133 Wall st. Classics
George Alonzo Mirick, M.A. Amherst College 1896	<i>New Haven, Conn.</i>	442 George st. Psychology
Charles Thomas Mitchell, B.S. University of Pennsylvania 1899	<i>Philadelphia, Pa.</i>	57 Prospect st. Engineering
Sydney Knox Mitchell, B.A. Yale University 1898	<i>Lakeville, N. Y.</i>	90 S. M. History
Ishiro Miyake, Doshisha University, Japan, 1894	<i>Kumamoto, Japan</i>	119 Park st. Philosophy

- | | |
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| Arthur Boothby Morrill, B.A.
Yale University 1873 | <i>New Haven, Conn.</i> 459 Orange st.
Political and Social Science |
| Julia Catharine Morris, B.S.
Smith College 1898 | <i>Utica, N. Y.</i> 1144 Chapel st.
English |
| Oliver Cromwell Morse, B.A.
Yale University 1868 | <i>Winter Park, Fla.</i> A.
Biblical Literature |
| Henry Killam Murphy, B.A.
Yale University 1899 | <i>New Haven, Conn.</i> 85 Sachem st.
Mathematics |
| John Killam Murphy, B.A.
Yale University 1897,
PH.D. Yale University 1898 | <i>New Haven, Conn.</i> 85 Sachem st.
Engineering |
| Henry Hotchkiss Murray, PH.B.
Yale University 1893 | <i>Viola, Del.</i> A.
Engineering |
| Irene Tanner Myers, M.A.
Bethany College 1889 | <i>Wheeling, W. Va.</i> 281 Crown st.
English |
| Rokuro Nakaseko, PH.D.
Johns Hopkins University 1899 | <i>Kyoto, Japan</i> 20 Whalley av.
Biology |
| Robert Wilson Neal, B.A.
Univ. of Kansas 1898 | <i>Lawrence, Kan.</i> 497 Winthrop av.
English |
| George Henry Nettleton, B.A.
Yale University 1896 | <i>Boston, Mass.</i> 162 S. L.
English |
| Henry James Nichols, B.A.
Yale University 1899 | <i>Binghamton, N. Y.</i> 333 York st.
Physical Science |
| William Wallace Nichols, PH.B.
Yale University 1884,
M.E. Yale University 1886 | <i>New Haven, Conn.</i> 83 Pearl st.
Engineering |
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Yale University 1898 | <i>Ashburnham, Mass.</i> 344 Elm st.
English |
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Yale University 1899 | <i>Los Angeles, Cal.</i> 549 Orange st.
Political and Social Science |
| John Treadwell Norton, Jr., B.A.
Yale University 1898 | <i>Albany, N. Y.</i> 90 Whalley av.
Chemistry |
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Bethany College 1898 | <i>Norway, Kan.</i> 16 Hughes pl.
Physics |
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Augustana College 1898 | <i>Brooklyn, N. Y.</i> 16 Hughes pl.
Mathematics |
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Yale University 1897 | <i>New York City</i> A.
History |
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Wesleyan Theo. Coll., Montreal 1891,
PH.D. Heidelberg 1897 | <i>New Haven, Conn.</i> 37 Lynwood st.
Biblical Literature |

Paul Skeels Peirce, PH.B. Cornell University 1897	<i>Ithaca, N. Y.</i> 22 Whalley av. History
Charles Adams Peters, B.S. Boston University 1897	<i>Worcester, Mass.</i> Kent Lab'y. Chemistry
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Alexander Pratt, Jr., B.A. Trinity College 1898	<i>Bridgeport, Conn.</i> Bridgeport Political and Social Science
Charles Theodore Ramsden, PH.B. Yale University 1896	<i>Santiago de Cuba, Cuba</i> A. Civil Engineering
Albert Sidney Reid, B.A. Drake University 1896 M.A. Drake University 1897	<i>New Haven, Conn.</i> 112 Green st. History
Chauncey Brewster Rice, PH.B. Yale University 1894	<i>New Haven, Conn.</i> 56 N. S. H. Mathematics
Frank Russell Rich, PH.B. Yale University 1890	<i>Bethel, Conn.</i> 172 Thompson st. English
Alfred Ernest Richards, B.A. Yale University 1898	<i>Hartford, Conn.</i> 90 Whalley av. English
Marion Edwards Richards, B.A. Smith College 1899	<i>New Haven, Conn.</i> 137 Edwards st. Philosophy
Julian Ashton Ripley, B.A. Yale University 1898	<i>New York City</i> A. English
Allan Douglas Risteen, B.S. Worcester Polytechnic Institute	<i>Hartford, Conn.</i> 17 Ashly st. Mathematical Physics
Frederick Oscar Robbins, B.A. Yale University 1896	<i>Greenville, N. H.</i> 227 Sherman av. Romance Languages
Peter Roberts, B.D. Yale University 1886	<i>Scranton, Pa.</i> 48 E.D. Political and Social Science
Ernest Lauren Robinson, B.A. Yale University 1894	<i>Cheshire, Conn.</i> A. Latin
Henry Hollister Robinson, PH.B. Yale University 1895	<i>Hartford, Conn.</i> 333 York st. Natural Science
James Francis Chalfant Robinson, B.L. University of Cincinnati 1893	<i>Cincinnati, O.</i> 280 Winthrop av. History
Maurice Henry Robinson, B.L. Dartmouth College 1890, M.A. Dartmouth College 1897	<i>Madelia, Minn.</i> 522 Winthrop av. Political and Social Science

Edith Antoinette Rockwell, B.L. Smith College 1896	<i>New Haven, Conn.</i> 281 Crown st. English
Zula Elizabeth Rogers, B.S. Wesleyan University 1898	<i>Meriden, Conn.</i> Meriden Physics
Robert Kilburn Root, B.A. Yale University 1898	<i>New Haven, Conn.</i> 58 Grove st. English
Agnes Ford Rowe, B.A. Syracuse University 1894	<i>New Haven, Conn.</i> 285 Willow st. English
Louis Barcroft Runk, B.A. Yale University 1893	<i>Philadelphia, Pa.</i> A. Political and Social Science
William Nelson Runyon, B.A. Yale University 1892	<i>Plainfield, N. J.</i> A. English
Mary Josephine Salter, B.S. Wellesley College 1894	<i>Duluth, Minn.</i> 66 Trumbull st. English, Latin
Walter Murray Sanders, PH.B. Yale University 1899	<i>Montclair, N. J.</i> 111 Grove st. Chemistry
Charles Edward Sargent, M.A. Hates College 1883	<i>New Haven, Conn.</i> 61 Grove st. Political and Social Science
Edward Christian Schneider, B.S. Tabor College 1897	<i>Shenandoah, Iowa</i> 24 E.D. Biology
Charles Otis Scoville, B.A. Yale University 1887	<i>New Haven, Conn.</i> 162 Temple st. Philosophy
Hubert Gibson Shearin, B.A. Center College 1897, M.A. Center College 1899	<i>Dansville, Ky.</i> 335 George st. English
William Kent Shepard, PH.B. Yale University 1897	<i>New Haven, Conn.</i> 58 N. S. H. Mathematical Physics
Susan Smith Sheridan, B.A. University of Omaha 1897	<i>New Haven, Conn.</i> 519 Orange st. English
Oliver Taylor Sherwood, B.A. Yale University 1884	<i>Southport, Conn.</i> Southport Music
Earnest Clyde Simpson, B.S. Carson and Newman College 1893, LL.B. Yale University 1899	<i>Mossy Creek, Tenn.</i> 1404 Chapel st. History
Barry Congar Smith, B.A. Yale University 1899	<i>New York City</i> A. History
Burke Smith, B.S. Univ. of Wash. 1899	<i>Auburn, Wash.</i> 47 Lake pl. Mathematics
Marius Joseph Spinello, B.A. Yale University 1896, M.A. Yale University 1899	<i>New Haven, Conn.</i> 13 Warren st. Latin

Frederick Clark Stanley, B.A. Williams College 1893	Bridgeport, Conn. Chemistry	Bridgeport
Constantine Demeter Stephanove, B.A. Yale University 1899	Bansko, Macedonia 105 Broadway Philosophy	
Alfred Hall Stevens, PH.B. Yale University 1893	Clinton, Conn. Engineering	A.
Edgar Crane Stiles, B.A. Yale University 1886	West Haven, Conn. Mineralogy	West Haven
Charles Emerson Stone, PH.B. Yale University 1889	Andover, Mass. Romance Languages	A.
Karl Eben Stromquist, B.S. Bethany College 1899	McPherson, Kansas 59 Prospect st. Mathematics	
Wendell Melville Strong, M.A. Cornell University 1894, PH.D. Yale University 1898	Montclair, N. J. Mathematics	307 W.
Samuel Cryder Sturgis, B.A. South Carolina College 1885, M.A. Yale University 1899	Fair Forest, S. C. Political and Social Science	25 High st
Catherine Cullinan Sullivan, B.A. Smith College 1889	Bridgeport, Conn. English	Bridgeport
Margaret Sweeney, B.A. Radcliffe College 1899	Boston, Mass. English	97 Dwight st.
John Trumbull Swift, B.A. Yale University 1884	Colchester, Conn. English	342 George st.
John Frelinghuysen Talmage, B.A. Yale University 1895	New York City English	A.
Leonard Merrige Tarr, B.A. Bates College 1882	New Haven, Conn. Natural Science	156 Whalley av.
Robert Longley Taylor, B.A. Hamilton College 1882	New Haven, Conn. Romance Languages	67 Mansfield st.
William James Taylor, B.A. University of Nebraska 1891, M.A. University of Nebraska 1897	New Haven, Conn. Philosophy	133 Dixwell av.
Daniel Webster Terry, B.A. Northwestern University 1892	Claverack, N. Y. Classics	88 Lake pl.
Clifford C. Thorn, LL.B. Boston University 1896, M.A. State Univ. of Iowa 1899	Washington, Iowa Political and Social Science	318 Orange st.
Edward Thorstenberg, B.A. Bethany College 1899	Assaria, Kansas Modern Languages	59 Prospect st.

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| Edward Montclair Tillinghast, B.A.
Yale University 1888 | <i>New Haven, Conn.</i>
364 Mansfield st.
Political and Social Science |
| John Quillin Tilson, B.A.
Yale University 1891,
M.L. Yale University 1894 | <i>Clear Branch, Tenn.</i> 550 P.
Political and Social Science |
| Asa Currier Tilton, B.A.
Yale University 1896 | <i>Raymond, N. H.</i> 1151 Chapel st.
History |
| Chauncey Brewster Tinker, B.A.
Yale University 1899 | <i>Denver, Colo.</i> 36 E. D.
English |
| Eyler Jonathan Todd, LL.B.
Yale University 1899 | <i>Springfield, O.</i> 494 State st.
Political and Social Science |
| Elizabeth Blakesley Tracy, B.A.
Wellesley College 1891 | <i>New Haven, Conn.</i> 55 Dwight st.
Philosophy |
| John Clayton Tracy, PH.B.
Yale University 1890,
C.E. Yale University 1882 | <i>New Haven, Conn.</i> 55 Dwight st.
Mathematics |
| Ralph DeForest Tucker, PH.B.
Yale University 1895 | <i>Monson, Mass.</i> 419 Temple st.
History |
| Mabelle Morris Ufford, B.L.
Smith College 1899 | <i>New Haven, Conn.</i> 343 Orange st. |
| William Valentine, PH.B.
Yale University 1897 | <i>New York City</i> 162 S. L.
Chemistry |
| Joseph King Vandenburg, B.A.
Wesleyan University 1895,
M.A. Wesleyan University 1898 | <i>Orange, N. J.</i> Orange
Philosophy |
| Ralph Gibbs VanName, B.A.
Yale University 1890 | <i>New Haven, Conn.</i> 121 High st.
Chemistry |
| Charles Philip Wagner, B.A.
Yale University 1899 | <i>Putnam, Conn.</i> 254 Crown st.
Romance Languages |
| Curtis Howe Walker, B.A.
Yale University 1899 | <i>New Haven, Conn.</i> 97 Whitney av.
History |
| J. E. Wallace Wallin, B.A.
Augustana College 1897,
M.A. Yale University 1899 | <i>Stanton, Iowa</i> 88 George st.
Philosophy |
| Halsey Albert Weaver, PH.B.
Yale University 1895 | <i>Woodstock, Conn.</i> 65 Spring st.
Engineering |
| Moses Cook Welch, B.S.
Yale University 1850 | <i>Hartford, Conn.</i> A.
Biblical Literature |
| Charles Heald Weller, B.A.
Yale University 1895 | <i>New Haven, Conn.</i> 17 Parmelee av.
Classics |

Chauncey Wetmore Wells, B.A. Yale University 1896	Middletown, Conn. 203 Lawrence st. English
Philip Patterson Wells, B.A. Yale University 1889	New Haven, Conn. 72 Mansfield st. Political and Social Science
Jacob Westlund, PH.D. Yale University 1898	Lindsborg, Kan. 218 Mansfield st. Mathematics
Monroe Nichols Wetmore, B.A. Yale University 1888	New Brighton, N. Y. A. Latin
Lynde Phelps Wheeler, PH.B. Yale University 1894	New Haven, Conn. 333 York st. Physics
William Arthur Whitcomb, PH.B. De Pauw University 1894 and Yale University 1895	Glens Falls, N. Y. A. Physics
Charles Huntington Whitman, B.A. Colby University 1897	Bangor, Me. 139 Dwight st. English
John Whitmore, PH.D. Yale University 1892	New Haven, Conn. 147 Bradley st. Mathematics
Marian Parker Whitney	New Haven, Conn. 227 Church st. Romance Philology
George Reber Wieland, B.S. Pennsylvania State College 1893	Chester, Pa. 58 Mansfield st. Natural Science
Edwin Bidwell Wilson, B.A. Harvard University 1899	Cambridge, Mass. 117 W. D. Mathematics
Ruth Goulding Wood, B.L. Smith College 1898	Pawtucket, R. I. 1193 Chapel st. Mathematics
Alice Lincoln Wright, B.A. Wellesley College 1897	New Haven, Conn. 128 York st. English
Henry Burt Wright, B.A. Yale University 1898	New Haven, Conn. Dwight Hall Classics
Minosuke Yamaguchi, B.A. Lombard University 1897	Kurume, Japan 99 W. D. Philosophy
Seiichi Yamaguchi Doshisha University, Japan, 1896	Kyoto, Japan 115 Elm st. Political and Social Science
Yochi Yamaguchi Doshisha University, Japan, 1896	Kyoto, Japan 351 Washington st. Music
Masajiro Yokoyama Doshisha University, Japan, 1896	Okayama, Japan 404 Crown st. Political and Social Science

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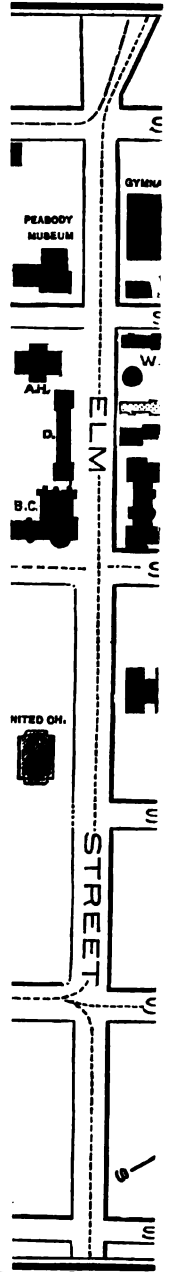
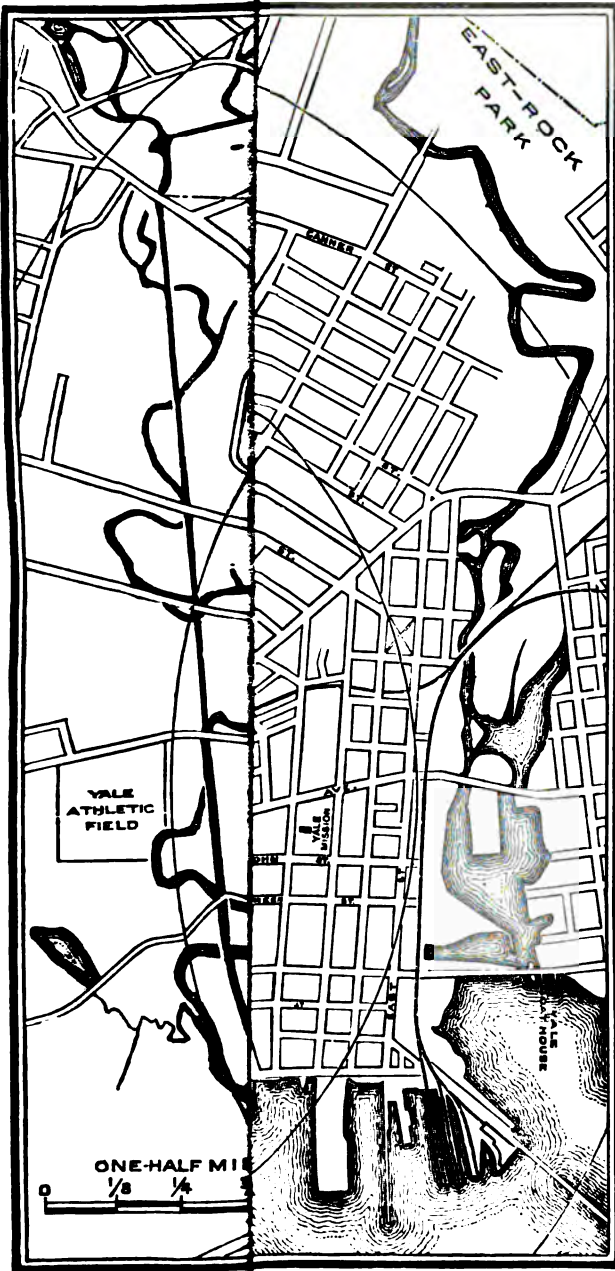
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V. Modern Language and Literature	1
VI. Nature and Physical Science	1
VII. Mathematics	1
VIII. The Fine Arts	1
IX. Music	11
X. Physical Culture	1
167 Physical Education	1



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B.	SHEFFIELD BIOLOGICAL LABORATORY	P. H.	PHELPS HALL
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B. H.	BERKELEY HALL	S. L.	SHEFFIELD LABORATORY
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F.	FARNAM HALL	W.	WELCH HALL
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L.	LYCEUM	WINCH.	WINCHESTER HALL
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NEW HAVEN:

1901

CALENDAR

1901

26 Sept.	Thursday	FIRST TERM begins.
20 Oct.	Sunday	Bicentennial Celebration begins.
23 Oct.	Wednesday	Bicen'ennial Celebration ends.
27 Nov.	Wednesday	THANKSGIVING RECESS begins, 1.20 P. M.
29 Nov.	Friday	RECESS ends, 8 A. M.
18 Dec.	Wednesday	FIRST TERM ends.

Winter Vacation

1902

8 Jan.	Wednesday	SECOND TERM begins.
26 Mar.	Wednesday	SPRING RECESS begins, 1.20 P. M.
3 April	Thursday	RECESS ends, 8 A. M.
14 May	Wednesday	Anniversary of the Divinity School.
27 May	Tuesday	School of the Fine Arts, term ends.
22 June	Sunday	Baccalaureate Sermon.
25 June	Wednesday	COMMENCEMENT.

Summer Vacation

25 Sept.	Thursday	FIRST TERM begins.
17 Dec.	Wednesday	FIRST TERM ends.

For information with regard to the Graduate School, not contained in this pamphlet, and also with regard to Fellowships and Scholarships (see page 14), address the Dean,

Professor ANDREW W. PHILLIPS.

GRADUATE SCHOOL

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CHARLTON MINER LEWIS, PH.D., *Professor of English*
WILLIAM LYON PHELPS, PH.D., *Professor of English Literature*
ROBERT NELSON CORWIN, PH.D., *Professor of German*
IRVING FISHER, PH.D., *Professor of Political Economy*
JAMES PIERPONT, PH.D., *Professor of Mathematics*

HANNIS OERTEL, PH.D., *Professor of Linguistics and Comparative Philology*

PERCEY FRANKLYN SMITH, PH.D., *Professor of Mathematics*

CHARLES FOSTER KENT, PH.D., *Professor of Biblical Literature*

HENRY SOLON GRAVES, M.A., *Professor of Forestry*

HENRY CROSBY EMERY, PH.D., *Professor of Political Economy*

OTHER INSTRUCTORS

Rev. EDWARD L. CURTIS, PH.D., D.D., *Professor of Hebrew*

HON. WILLIAM KNEELAND TOWNSEND, D.C.L., *Professor of Contracts, Patents, and Admiralty Jurisprudence*

ROBERT LOUIS SANDERSON, *Assistant Professor of French*

GEORGE BARKER STEVENS, PH.D., LL.D., *Professor of Systematic Theology*

SAMUEL EBEN BARNEY, C.E., *Assistant Professor of Civil Engineering*

FREDERICK WELLS WILLIAMS, B.A., *Assistant Professor of Modern Oriental History*

EDWARD A. BOWERS, B.A., *Lecturer on Forest Administration and Law*

WILLIAM JAMES COMSTOCK, PH.B., *Instructor in Organic Chemistry*

JAY WEBBER SEEVER, M.D., *Associate Director of the Gymnasium*

Rev. FRANK CHAMBERLIN PORTER, PH.D., D.D., *Professor of Biblical Theology*

Rev. BENJAMIN WISNER BACON, LITT.D., D.D., *Professor of New Testament Greek*

WILLISTON WALKER, PH.D., D.D., *Professor of Ecclesiastical History*

WILLIAM GILBERT ANDERSON, M.D., *Associate Director of the Gymnasium*

EDWARD WHEELER SCRIPTURE, PH.D., *Assistant Professor of Experimental Psychology, and Director of the Psychological Laboratory*

WILBUR LUCIUS CROSS, PH.D., *Assistant Professor of English*

THOMAS CALHOUN STEARNS, PH.D., *Instructor in Ancient Philosophy*

Rev. WARREN JOSEPH MOULTON, PH.D., *Instructor in Biblical Literature*

HENRY DAVIES, PH.D., *Lecturer on Aesthetics and Patristic Philosophy*

HARRY BURR FERRIS, M.D., *Hunt Professor of Anatomy*

ALEXANDER WILLIAM EVANS, M.D., PH.D., *Assistant Professor of Botany*

PHILIP EMBURY BROWNING, PH.D., *Assistant Professor of Chemistry*

OLIVER HUNTINGTON RICHARDSON, PH.D., *Assistant Professor of History*

HENRY LORD WHEELER, PH.D., *Assistant Professor of Organic Chemistry*

JAMES WILLIAM TOUMEY, M.S., *Assistant Professor of Forestry*

KENNETH MCKENZIE, PH.D., *Instructor in Romance Languages*

STUART HENRY ROWE, PH.D., *Lecturer on Pedagogics*

JAMES LOCKE, PH.D., *Instructor in Chemistry*

MAURICE HENRY ROBINSON, B.A., *Instructor in Political Economy*

LAFAYETTE BENEDICT MENDEL, PH.D., *Assistant Professor of Physiological Chemistry*

JAMES W. D. INGERSOLL, PH.D., *Assistant Professor of Latin*

HENRY BARRETT LEARNED, M.A., *Instructor in History*

WESLEY ROSWELL COE, PH.D., *Instructor in Biology*

CLYDE CHEW GLASCOCK, PH.D., *Instructor in German*

CLOYD NORTH McALLISTER, PH.D., *Assistant in Psychology*

GEORGE REDINGTON MONTGOMERY, B.A., *Lecturer in Philosophy*

THEODORE WOOLSEY HEERMANCE, PH.D., *Instructor in Classical Archaeology*

HARRY BENJAMIN JEPSON, B.A., MUS.B., *Assistant Professor of the Theory of Music*

WILLIAM ANTHONY GRANVILLE, PH.D., *Instructor in Mathematics*

ISIDOR TROOSTWYK, *Instructor in Violin Playing*

WILLIAM BACON BAILEY, PH.D., *Instructor in Statistics*

GERVASE GREEN, PH.D., *Instructor in Philosophy and Pedagogy*

CHARLES GROSVENOR OSGOOD, PH.D., *Tutor in English.*

MEYER WOLODARSKY, PH.D., *Instructor in Rabbinical Literature*

HERBERT EDWIN HAWKES, PH.D., *Instructor in Mathematics*

HERBERT ERNEST GREGORY, PH.D., *Assistant Professor of Physical Geography*

ALBERT GALLOWAY KELLER, PH.D., *Instructor in Social Science*

HARRY WARD FOOTE, PH.D., *Instructor in Physical Chemistry*

JOHN CHESTER ADAMS, B.A., *Tutor in English*

SHERWOOD OWEN DICKERMAN, B.A., *Tutor in Greek*

WILLIAM MILTON HESS, PH.D., *Lecturer in Philosophy*

RUDOLPH SCHWILL, PH.D., *Instructor in French*

EDWIN BIDWELL WILSON, B.A., *Instructor in Mathematics*

ADMINISTRATIVE COMMITTEE,

WITH CONSULTATION HOURS

ARTHUR TWINING HADLEY, LL.D., PRESIDENT,

Room 6, Treasury Building, daily, 8.30 A. M. to 1 P. M.

ANDREW WHEELER PHILLIPS, PH.D., DEAN, and *Professor of Mathematics*, 90 High street, daily, except Saturday, 2.30 to 4 P. M.

ARTHUR MARTIN WHEELER, LL.D., *Professor of History*,

C, Osborn Hall, Monday, Tuesday, Thursday, and Friday, 11 A. M.

CHARLES BRINCKERHOFF RICHARDS, M.A., *Professor of Mechanical Engineering*, 112 Winchester Hall, Tuesday and Friday, 10 A. M.

REV. GEORGE TRUMBULL LADD, D.D., LL.D., *Professor of Philosophy*, 275 Lawrance Hall, Monday and Thursday, 11 A. M.

THOMAS DAY SEYMOUR, LL.D., *Professor of Greek*,

22 Phelps Hall, daily, 11 A. M. to 12 M.

ALBERT STANBURROUGH COOK, PH.D., L.H.D., *Professor of English*, 219 Bishop street, Monday and Thursday, 1.30 P. M.

HENRY WALCOTT FARNAM, R.P.D., *Professor of Political Economy*, 43 Hillhouse av., daily, except Saturday, 2 to 3 P. M.

RUSSELL HENRY CHITTENDEN, PH.D., *Professor of Physiological Chemistry, and Director of the Sheffield Scientific School*, 3 Sheffield Hall, Monday, Tuesday, Wednesday, and Thursday, 10 A. M. to 12 M.

FRANK KNIGHT SANDERS, PH.D., D.D., *Professor of Biblical History and Archaeology*, East Divinity Hall, daily, 9 to 11 A. M.

GENERAL STATEMENT ORGANIZATION

The Graduate School of Yale University forms a section of the Department of Philosophy and the Arts, which was first formally organized in 1847 for scientific and graduate instruction, but now includes Yale College, the Sheffield Scientific School, the School of the Fine Arts, the Department of Music, and the Forest School.

The degrees of Doctor of Philosophy and Civil Engineer were first offered in 1860, the degree of Dynamical or Mechanical Engineer in 1873, that of Master of Arts (previously given without evidence of study) in 1874, and that of Master of Science in 1897.

The professors in the several sections of the Department of Philosophy and the Arts together constitute the Faculty of the Graduate School. The general oversight of graduate instruction and graduate students is entrusted to the Dean and the Administrative Committee, who may be called upon for information and advice. Students are expected to report to the Dean soon after reaching New Haven.

ADMISSION AND REGISTRATION

Graduates of this and other Colleges and Universities, and (in exceptional cases, by special permission) other persons of liberal education, who are at least eighteen years old, are received as students for longer or shorter periods, with or without reference to the attainment of a degree.

All graduate students who are not regularly enrolled in any other department of the University are required to register their names at the office of the Dean at the beginning of each year of study.

The degree of Doctor of Philosophy, with the courses of the Graduate School leading thereto, is open to candidates without distinction of sex.

INSTRUCTION

Courses of study are offered in the following departments :

- I. PSYCHOLOGY, ETHICS, AND PHILOSOPHY.
- II. ECONOMICS, SOCIAL SCIENCE, HISTORY, AND LAW.
- III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.
- IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY.
- V. MODERN LANGUAGES AND LITERATURES.
- VI. NATURAL AND PHYSICAL SCIENCE.
- VII. MATHEMATICS.
- VIII. THE FINE ARTS.
- IX. MUSIC.
- X. PHYSICAL EDUCATION.

Instruction is given partly by lectures, partly in recitations and by oral and written discussions, partly by directing courses of reading, and partly by the direction of work in the laboratories and with instruments.

The attention of teachers who desire to fit themselves more thoroughly for a higher grade of professional work is called to the advantages offered by this department for pedagogical instruction and discipline. In addition to the special and advanced study of the subjects in which the graduate student desires instruction, and the pursuit of courses in psychology, ethics, philosophy, and of other courses cognate with pedagogy, opportunity is afforded to observe the actual practice in the class-room, as well as the organization of the different departments of the University and their methods of work.

CLUBS

In various voluntary associations, instructors and students meet periodically for the reading of papers, oral discussions, etc.; such are :

THE CLASSICAL CLUB.
THE MATHEMATICAL CLUB.
THE POLITICAL SCIENCE CLUB.
THE PHILOSOPHICAL CLUB.
THE SEMITIC AND BIBLICAL CLUB.
THE MODERN LANGUAGE CLUB.
THE GERMAN JOURNAL CLUB.
THE ENGLISH CLUB.
THE PHYSICS JOURNAL CLUB.
THE ENGINEERS' CLUB.
THE CHEMICAL CLUB.
THE HISTORICAL CLUB.
THE PHYSICAL CLUB.
THE GEOLOGICAL CLUB.
THE BIOLOGICAL CLUB.
THE KENT LABORATORY JOURNAL CLUB.

FEES AND EXPENSES

The fee for instruction is generally one hundred dollars per year ; but it may be more, or less, according to the courses pursued and the amount of instruction received.

A special fee of five dollars is charged to those who use the Gymnasium, and one or two dollars to those admitted to the use of the College Reading-Room.

Board is obtained at prices varying from three and a half to eight dollars a week. The average price is under five dollars.

A list of suitable rooms is kept at the Dean's office.

LIBRARIES AND READING-ROOMS

Students have the free use of all the Libraries of the University. The whole number of volumes in the several libraries of the University is more than 310,000.

The UNIVERSITY LIBRARY contains about 275,000 volumes, and many thousands of unbound pamphlets. Its READING-ROOM contains the books most important for daily consultation and reference, together with scholarly

periodicals. Of current periodical publications, including publications of learned societies, the Library receives an unusually large number,—the foreign serials alone being not less than five hundred.

The LINONIAN AND BROTHERS LIBRARY contains about 22,000 volumes of the best current literature.

The COLLEGE READING-ROOM receives fifty-five daily newspapers, American and foreign, nearly sixty weeklies, and seventy-four other periodicals,—in addition to the periodicals received at the University Library. Graduate Students are admitted to the College Reading-Room on payment of an annual fee of two dollars.

The SHEFFIELD SCIENTIFIC SCHOOL LIBRARY contains 5,000 volumes, largely mathematical.

The ART SCHOOL LIBRARY contains about 500 volumes of expensive illustrated works.

The LOWELL MASON LIBRARY contains 4,000 volumes of music.

The Peabody Museum, the Observatory, and the several Laboratories have valuable technical libraries.

Several of the departments of study (the Classical, English, Germanic, Mathematical, Philosophical, Political Science, and Historical) have special libraries of standard works for the use of advanced students.

Dwight Hall, the headquarters of the Young Men's Christian Association, is provided with a good library and a pleasant reading-room, besides the halls used for religious meetings.

A parlor and study-room at 135 Elm street is fitted up for the special use of the women studying in the Graduate School.

LABORATORIES, MUSEUMS, AND COLLECTIONS

The Peabody Museum of Natural History.

The Physical, the Chemical, the Biological, and the Engineering Laboratories, and the Eaton Herbarium, of the Sheffield Scientific School.

The Sloane Physical, the Kent Chemical, and the Psychological Laboratories of Yale College.

The collections of the School of Fine Arts.

The collection of coins in the University Library, and various collections of models, casts, and photographs used in the teaching of mathematics and in other departments of instruction.

LECTURES AND CONCERTS

The following courses of public lectures and concerts are open to the students of the University :

THE SHEFFIELD COURSE.

THE ART COURSE.

THE DIVINITY SCHOOL LECTURE COURSES.

THE AMERICAN LECTURES ON THE HISTORY OF RELIGIONS.

THE DWIGHT HALL COURSE.

THE PHI BETA KAPPA COURSE.

THE UNIVERSITY CHAMBER CONCERTS.

THE SYMPHONY ORCHESTRA CONCERTS.

THE TROWBRIDGE LECTURES IN THE ART SCHOOL.

THE DODGE LECTURE COURSE.

THE BROMLEY LECTURE COURSE.

THE YALE PUBLIC LECTURES.

DEGREES

The DEGREE OF DOCTOR OF PHILOSOPHY is conferred upon those students who show the results of resident graduate work by a thesis giving evidence of high attainment and power of investigation, and by an examination on studies whose grade and amount meet the approval of the Faculty. Under ordinary circumstances two or more years' work in residence will be required, but in exceptional cases work of equal grade at another University may take the place of a year's residence here. The thesis must be deposited at the Library for public inspection, not later than May 1. A good knowledge

of Latin, German, and French is required in all cases, unless, for some very exceptional reasons, the candidate be excused by the Faculty. Evidence of sufficient attainments in these languages must be furnished the Dean at least two years before the degree is given. The fee for instruction is one hundred dollars per year. The fee for graduation is ten dollars.

The DEGREE OF MASTER OF ARTS is conferred on Bachelors of Arts of Yale College (and on Bachelors of Arts of other colleges whose course of study is equivalent to that of Yale College), who have given to the College Faculty evidence of satisfactory progress in liberal studies after receiving their first degree. Such evidence may be furnished by one year's systematic study (not professional) in New Haven, under the direction of the College Faculty, followed by an examination. Graduates of other colleges can obtain the degree only by residence as thus described. The charge for instruction is usually one hundred dollars per year, with a fee of ten dollars for the degree.

Such Bachelors of Arts of *Yale College* as may not choose to reside at the College for study may at any time not less than three years after graduation, show, in either of the two following ways, that they have spent a year in liberal (and non-professional) study, and are worthy of recommendation for this degree. (1) Such candidates may apply to the Faculty for the designation of a course of study, on which an examination shall be taken. This application must be accompanied by a fee of twenty-five dollars. (2) Or a candidate may submit as evidence of his fitness for this degree a printed essay, for the examination of which a fee of twenty-five dollars (to be paid in advance) is required. An additional fee of ten dollars will be charged in all cases for the degree.

A committee of the Faculty is appointed (consisting for the present year of Professors Wheeler and Phillips), to

whom candidates for this degree must submit their proposed courses of study for approval by the end of October in each year; and the evidence of a year's study must be submitted to the same committee by June 1.

The DEGREE OF MASTER OF SCIENCE is conferred on graduates of this or other universities, of two years' standing or upwards, who have taken their first degree in science and who pursue successfully a higher course of study in science under the direction of the Governing Board of the Sheffield Scientific School. Such a course involves at least one year of resident graduate study, followed by an examination and presentation of a satisfactory thesis in some department of science. A committee of the Faculty is appointed, to whom candidates for this degree must submit their proposed courses of study for approval before the end of October of each year.

The DEGREES OF CIVIL ENGINEER AND OF MECHANICAL ENGINEER are conferred on Bachelors of Philosophy who have taken the first degree in Engineering study, and who pursue a higher course under the direction of the Governing Board of the Sheffield Scientific School for at least two years, sustaining a final examination, and giving evidence of their ability to design important constructions and to make the requisite drawings and calculations. The fee for graduation is five dollars.

FELLOWSHIPS

FIVE FELLOWSHIPS yielding four hundred dollars each, not exempting the holders from charges for tuition, are open to graduates of all colleges; but preference is given to those who have already spent at least one year in graduate study, and have shown capacity for original work.

The BULKLEY FELLOWSHIP IN AMERICAN HISTORY was established in 1901 by the gift of ten thousand dollars from

Mr. Jonathan Bulkley, of the class of 1879, and other members of his family, in memory of Helena Perry Bulkley. The income, four hundred dollars, will be awarded annually to a student of high character and marked ability, who will pursue graduate studies in American History or Administration under the direction of the Professors of History.

The HENRY C. ROBINSON FELLOWSHIP, founded in 1900 in the name of Mrs. Mary Robinson Cheney, of Hartford, Conn., and her sister, Miss Eliza Robinson, in memory of their uncle, Henry C. Robinson, of the class of 1852 yields the income from five thousand dollars. It is awarded annually to a student of the Graduate School, selected on the ground of ability and attainments.

The CLASS OF '90 FELLOWSHIP, yielding one hundred and fifty dollars, is awarded to a student who has shown ability to do research-work.

The YALE ALUMNI ASSOCIATION OF CALIFORNIA FELLOWSHIP of three hundred dollars is given to a graduate of one of the California Universities, pursuing studies at Yale in the Graduate School. The incumbent is selected by the Association.

The following Fellowships are, by the terms of the donations, open only to graduates of Yale College.

THE DOUGLAS FELLOWSHIP.

THE SOLDIERS' MEMORIAL FELLOWSHIP.

THE SILLIMAN FELLOWSHIP.

THE JOHN SLOANE FELLOWSHIP.

THE SCOTT HURTT FELLOWSHIP.

THE ELLEN BATTELL ELDRIDGE FELLOWSHIPS (two).

THE MACY FELLOWSHIP.

THE LARNED FELLOWSHIPS (three).

THE FOOTE FELLOWSHIPS (three).

THE CUYLER FELLOWSHIP.

SCHOLARSHIPS

TWENTY SCHOLARSHIPS, yielding one hundred dollars each, are open to graduates of all colleges.

The following Scholarships are open only to graduates of Yale College.

THE CLARK SCHOLARSHIPS, and
THE W. W. DE FOREST SCHOLARSHIP.

The DANIEL C. EATON GRADUATE SCHOLARSHIP IN BOTANY is endowed with the income of a fund of two thousand dollars given by Mrs. Eaton in commemoration of her husband, the late Professor Daniel C. Eaton. This scholarship will be open for competition to members of the Senior classes in the Academic and Scientific departments, on conditions to be prescribed by the Governing Board of the Sheffield Scientific School.

SIX SHEFFIELD SCHOLARSHIPS of \$100 each (covering the charges for tuition) are awarded, on application, to those members of the graduating class of the Sheffield Scientific School who have attained high proficiency in the special studies of their respective courses, and who desire to spend one or more years in graduate study in the School. Each scholarship will be available for one year only. Application for these scholarships must be made in writing on or before June 1st to the head of the department to which the student belongs, with a statement as to the character of the graduate study to be pursued.

Candidates for appointment to Fellowships and Scholarships should send their applications, accompanied by letters of recommendation and other evidence of the excellence of their work already accomplished, to the Dean, Professor Andrew W. Phillips, not later than May 1.

COURSES OF INSTRUCTION

Courses marked with an asterisk (*) are undergraduate courses ; they are open to graduate students who have the consent of the instructor and the approval of the Faculty.

The number of hours stated means, when not otherwise specified, hours of exercise, lectures, or recitations, each week through the year.

COURSES OF INSTRUCTION

I. PHILOSOPHY

GEORGE T. LADD, D.D., LL.D.	GEORGE B. STEVENS, Ph.D., D.D.
GEORGE M. DUNCAN, M.A.	E. HERSHEY SNEATH, Ph.D.
EDWARD W. SCRIPTURE, Ph.D.	THOMAS C. STEARNS, Ph.D.
HENRY DAVIES, Ph.D.	STUART H. ROWE, Ph.D.
CLOYD N. McALLISTER, Ph.D.	GEORGE R. MONTGOMERY, B.A.
GERVASE GREEN, Ph.D.	WILLIAM M. HESS, Ph.D.

COURSES IN THIS DEPARTMENT are offered in Psychology, Logic and the Principles of Science, Ethics, Aesthetics, Introduction to Philosophy, History of Philosophy, Metaphysics, Epistemology, Philosophy of Religion, Pedagogics, and Philosophical Criticism.

For COGNATE COURSES, of especial value to students in this Department, in Physiology, Histology and Biology, see course VI, 54 f.; in Anthropology and Social Science, see course II, 1 f.; in Evolution Theories, see course VI, 7; in Chemical Theory, see course VI, 46; and in Plato see course IV, 3.

THE PHILOSOPHICAL SEMINARY ROOM, to which there is free access at all hours, is general headquarters for all graduate students in Philosophy. This room contains a small Departmental Library, intended to furnish students the advantages of a good private philosophical library, and also to enable them as prospective teachers to familiarize themselves with the various existing text-books in the different branches of philosophy.

THE PSYCHOLOGICAL LABORATORY of the Department is thoroughly equipped for both instruction and original research. In addition to the provisions for work in experimental psychology, there are sections for experimental pedagogy and experimental phonetics; and also a library containing several hundred volumes, besides pamphlets and the current psychological periodicals. Each

student pursuing investigations is assigned a desk and an allotment of space and apparatus. An annual publication, the *Studies from the Yale Psychological Laboratory*, the eighth volume of which has just been issued, contains the results of all researches carried on in the laboratory.

THE PHILOSOPHICAL CLUB, composed of the instructors in the Department and all graduate students who take courses in philosophy, holds regular meetings fortnightly, on Tuesday evening. It is designed to afford opportunity both for the presentation and discussion of the results of original research by its members, and also for hearing addresses and papers from distinguished authorities on philosophical subjects, who are not connected with the Department as teachers. Addresses have been delivered before the Club by Professors Lloyd Morgan, John Watson, W. T. Harris, J. G. Schurman, William James, J. McKeen Cattell, Josiah Royce, Borden P. Bowne, James H. Hyslop, and others.

INTRODUCTION TO PHILOSOPHY

Professor LADD :—

*1 *Introduction to Philosophy.* 2 hrs.

This course of lectures is designed to present, in an elementary and summary way, the principal philosophical problems. It may be taken by those whose special studies lie in other departments and as a means of general culture. It is recommended to all who desire to specialize in this department and have not already had its equivalent.

During the latter half of the course special emphasis is laid upon the philosophy of life and of conduct, in connection with the discussion of problems in Ethics, Aesthetics, and the Philosophy of Religion.

[Monday and Wednesday, 10.30 A.M., B₁ O.]

Professor DUNCAN :—

[2 *Encyclopaedia of Philosophy.*

A series of informal lectures on the study of philosophy, and the literature of its various branches.

Omitted in 1901-1902.]

Professor SNEATH :—

***3 *Philosophical Anthropology.* 2 hrs.**

This course furnishes an outline study of man, his body and mind in their relations, his relations to nature, to his fellows, and to God.

[Monday and Wednesday, 9.30 A. M., A₂ O.]

PSYCHOLOGY

[Professor LADD :—

***4 *Abnormal Psychology.* 1 hr.**

This course of lectures discusses the phenomena of illusions and hallucinations, the physiological changes and mental states in sleep, and in hypnotic, somnambulistic, and other allied conditions. The theory of illusions and hallucinations is discussed in detail.

Omitted in 1901-1902.]

Professor DUNCAN :—

4. *Advanced Psychology.* 2 hrs.

A course in general psychology which aims at a detailed study of the phenomena of mental life from the scientific point of view. Sully's *Human Mind* will be read, with constant reference to Ladd's *Psychology*, *Descriptive and Explanatory*, James's *Principles of Psychology*, and the works of other leading modern authors ; and the reading will be accompanied by papers, discussions, and lectures.

[Monday, 8.30-10 A. M., C₂ O.]

Assistant Professor SCRIPTURE :—

***6 *Psychology (Physiological and Experimental).* 2 hrs.**

A general course illustrated by physiological and psychological experiments. Text-books: Ladd's *Outlines of Physiological Psychology*; Scripture's *The New Psychology*.

[Tuesday and Thursday, 2 P. M., Psychological Laboratory.]

***7 *Psychology (Elementary Laboratory Course).* 2 hrs.**

A series of exercises in experimental psychology to be performed by the student, affording a practical training in laboratory manipulation. Text-book: Scripture's *Elementary Course in Psychological Measurements*.

[Friday, 4.00 P. M., Psychological Laboratory.]

8 *Experimental Phonetics.* 1 hr.

Lectures, laboratory exercises and readings in the application of experimental methods to the study of language, song, rhythm and verse, including a careful study of the action of the vocal organs in producing English, German and French sounds and of the acoustic nature of these sounds as determined by recent investigations. This course is especially recommended to students wishing to understand the principles of correct pronunciation. Text-book: Scripture's *Introduction to Experimental Phonetics*. The well equipped phonetic laboratory is available for research.

[Friday, 10.30 A. M., Psychological Laboratory.]

9 *Theory of Statistics and Measurements.* 1 hr.

A study of the theory of probabilities and its application to practical work in the statistics and measurements of mental phenomena. Open only to students who have some knowledge of calculus.

[Monday, 2.00 P. M., Psychological Laboratory.]

10 *Psychology (Technical Course).* 1 hr

This course consists of a series of exercises for those who expect to teach experimental psychology and to manage a laboratory. The instruction covers: the principles involved in making, repairing, and caring for apparatus, with practical training in wood and metal work; the methods of experimental demonstration, with practice in the preparation of lantern slides and the use of lime-light and electric lanterns; the principles of laboratory economy, etc. The workshop practice will be cared for by a special instructor. The student is expected to make several pieces of apparatus involving the use of the lathe and the various small tools. He is urged to become sufficiently familiar with apparatus and lantern-work to give successfully an illustrated lecture; practice lectures will be held and subjected to criticism.

[Monday, 4.00 P. M., Psychological Laboratory.]

11 *Psychology (Research).* 4 hrs.

Only those who have had sufficient experience are permitted to undertake independent investigations. Special arrangements are made for candidates for the degree of Doctor of Philosophy. The results of all investigations belong to the archives of the laboratory. Those who undertake investigations thereby agree to prepare the results for publication, subject to approval, in the *Studies from the Yale Psychological Laboratory*.

ETHICS

Professor LADD :—

*12 *Elements of Ethics.* 1 hr.

A course of expository lectures, with required readings, on the elements of ethics, theoretical and applied. The lectures will treat especially the nature of man as fitted for conduct, the classification and nature of the virtues, the development of opinion on moral questions, and the history of the formation of moral ideals. Paulsen's *A System of Ethics* will be used as required reading.

[Wednesday or Saturday, 8.30 A. M., B₁ O.]

[13 *Ethical Seminary.* 2 hrs.

The principal topics in the philosophy of conduct will be studied in detail ; such as the origin and development of moral consciousness, the conceptions of duty, virtue, and the moral law, the nature, grounds, and sanction of the right, and the different "schools" of ethical writers. The method of study combines lectures with papers and discussions by the class, and special research-work for those who desire to investigate more thoroughly the literature of the particular subjects.

Omitted in 1901-1902.]

Professor SNEATH :—

14 *Modern Ethical Theories.* 2 hrs.

A critical study of modern ethical theories from Hobbes to the present time. The course will deal primarily with British ethics. However, German ethics from Kant to Schopenhauer will be carefully considered. Lectures and elaborate papers.

[Thursday, 9.30-11.00 A. M., B₁ O.]

For a course on Kant's Ethics, see course 34.

LOGIC AND EPISTEMOLOGY

Professor DUNCAN :—

15 *Epistemology.* 2 hrs.

The nature and conditions of formal truth will be studied in connection with the reading of an advanced work on logic, such as Hobhouse's *Theory of Knowledge*. This will be followed by a study of the psychology of knowledge and by an examination

of the nature, limits, and grounds for the validity of our knowledge of reality. Professor Ladd's *Philosophy of Knowledge* will be read in connection with the latter part of the course.

[Friday, 8.30–10.00 A. M., B₁ O.]

Professor SNEATH :—

16 *Philosophical Scepticism.*

2 hrs.

An historical and critical examination of scepticism with special reference to the construction of a theory of knowledge. The course is divided into three parts as follows :

1. *Historical.* The work in this part of the course includes an examination of the nature of scepticism as revealed in the history of speculative thought. It involves a study of the scepticism of the Sophists ; the Earlier and Later Pyrrhonists ; the Middle and New Academies ; the scepticism of Augustine and Descartes ; of Hume and Kant ; the positivism of Comte, Mill, and Lewes ; the relativism of Hamilton and Mansel ; and the agnosticism of Spencer.

2. *Critical.* After considering the significance of scepticism, a careful examination is made into the causes and grounds of scepticism, special attention being given to sensationalism and error.

3. *Constructive.* This part of the course is devoted to a study of the psychology and philosophy of knowledge—to an inquiry into the nature, origin, validity, and extent of knowledge. The work is conducted in the *seminary* method.

[Tuesday, 3.00–4.30 P. M., A₂ O.]

Dr. STEARNS :—

*17 *Logic and Scientific Method.*

2 hrs.

The first term will be devoted to the elements of formal logic, deductive and inductive ; the remainder of the year to the methods by which science has achieved and is achieving its successes.

The aim of the course will be to equip the student with a critical apparatus by which he may measure the correctness of the thinking both of others and of himself, no matter in what particular field of science his work of investigation may lie.

The text-books to be used are, Bain's *Logic, Deductive and Inductive* ; Jevons' *The Principles of Science*.

[Tuesday and Thursday, 9.30 A. M., B₁ O.]

AESTHETICS

Dr. DAVIES :—

18 *Aesthetics.* 1 hr.

The object of this course is to review the history of thought on the subject of the beautiful ; to give a philosophical account of the foundations upon which the arts rest ; and to study scientific theory of art in its relation to general philosophical system. Bosanquet's *History of Aesthetics*, Rutgers Marshall's *Pain, Pleasure, and Aesthetics*, and other works, are read in connection with the course.

[Monday, 5.00 P. M., B, O.]

For other courses dealing with Aesthetics, see courses 1 and 34.

METAPHYSICS

Professor LADD :

19 *Systematic Metaphysics.* 2 hrs.

The principal metaphysical conceptions—such as Space, Time, Causation, Number, Substance, Quality, Relation, etc.—will be thoroughly discussed ; and the attempt will be made to unite them in a harmonious view of the physical world and of human life. This will involve a careful study of such themes, as Matter and Spirit, Change and Development, the Absolute and the Relative, and God and the World. Most of the work will be research to be done by the class and presented in the form of elaborate papers for criticism and discussion.

[Wednesday, 3.15–5.00 P. M., B, O.]

Professor SNEATH :—

[20 *Philosophy of Mind.* 2 hrs.

Beginning with the facts and laws established by empirical psychology, this course aims at the construction of a metaphysic of mind. The following are some of the subjects to be treated : The concept of mind ; the reality, nature, genesis, and destiny of mind ; the relations of mind and body : materialistic objections, etc. The course will be based on Ladd's *Philosophy of Mind*.

Omitted in 1901–1902.]

For other courses dealing with Metaphysics, see courses 1, 32, 35 and 37.

PHILOSOPHY OF RELIGION

Professor LADD :—

- [21 *Philosophy of Religion.* 2 hrs.

In this course the principal facts and conceptions which belong to the religious development of man will be made the subjects of reflective study. The several topics will be treated in lectures, with constant reference to the works of Pfleiderer, Caird, and others; and the lectures will be supplemented by papers and discussion on the part of the class.

Omitted in 1901-1902.]

Professor STEVENS :—

- 22 *Philosophy of Religion, historically considered.*

2 hrs. 1st term.

This course consists of a study of the theories of Religion which are involved in the principal modern systems of Philosophy, together with a survey of the recent literature of the subject.

- 23 *The Philosophy of Theism.* 2 hrs. 1st term.

Lectures on the philosophical principles which underlie the defense of Theism, together with the reading and discussion of Fraser's *Philosophy of Theism* (second, condensed edition in one volume).

Mr. MONTGOMERY :—

- *24 *Nature and Development of Christian Belief.* 2 hrs.

A course on the foundations and content of the Christian Faith.

[Tuesday and Thursday, 10.30 A. M., A. O.]

For a course in Systematic Theology, see the Divinity School Catalogue.

PEDAGOGICS

Dr. ROWE :—

- 25 *Systematic Pedagogy.* 2 hrs.

This course will give a general survey of the field of education. The relation of pedagogy to allied subjects, and the fundamental aims, principles and methods of education in organization, dis-

cipline and instruction will be discussed. These subjects will be considered in both their theoretical and practical aspects. Pains will be taken to acquaint the student with the most helpful books in the wide range of educational literature. Papers and collateral reading will be required.

This course is intended both for those who wish some acquaintance with this department of knowledge and for those who intend to teach.

[Saturday, 9.30–11.00 A. M., B₁ O.]

Dr. McALLISTER :—

26 *Experimental Pedagogy.* 1 hr.

A summary of the results of experimental methods as applied to educational subjects. The topics treated will include: training of the senses, observation, memory, quickness of perception and thought, writing, drawing, fatigue, and study of children.

[Saturday, 11.30–12.30 A. M., Psych. Lab.]

Dr. GREEN :—

*27 *History and Theory of Education.* 2 hrs.

This course will comprise readings and lectures on the history and theory of modern education. The bearing of psychology upon methods of teaching and curricula will be considered, followed by a study of the works of the great educational Reformers, closing with a critical study of present theory and practice. The course is especially but not exclusively adapted to those who intend to engage in educational work.

[Monday and Friday, 3.00 P. M., B₁ O.]

For a course on Religious Education, see Prof. Brastow's course on *Christian Pedagogy* offered to divinity students.

HISTORY OF PHILOSOPHY

Professor DUNCAN :—

28 *Modern Philosophy.* 3 hrs.

A critical study of the systems of speculative thought from Descartes to the present time, especially of the great systems of the XVIIth and XVIIIth centuries, with cursory reading of philosophical masterpieces from Descartes to Kant: Descartes' *Method* and *Principles of Philosophy*, pt. I; Bacon's *Novum Organum*; Spinoza's *Ethics*—selections; Locke's *Essay on Human*

Understanding—selections; Leibniz's *Monadology and Philosophical Opuscles*; Berkeley's *Principles of Human Knowledge*; Hume's *Inquiry concerning Human Understanding*; Reid's *Inquiry into the Human Mind*; Kant's *Prolegomena to any Future Metaphysics*. Two hours are devoted to expository and critical lectures; the third hour to the presentation and discussion of papers by the students, and to the informal consideration of important problems, especially of those relating to metaphysics or ontology.

[Tuesday, Thursday, and Saturday, 8.30 A. M., A. O.]

Dr. STEARNS:—

*29 *Ancient Philosophy.* 2 hrs.

This course is designed to meet the wants not only of the student who desires, in the way of general culture, to know something about the scientific thoughts of the Greeks, which have so greatly determined the course of history, but also of the student who wishes an historical basis for his philosophical studies.

[Tuesday and Thursday, 10.30 A. M., B₁ O.]

*30 *Plato's Philosophical System.*

Nearly all the well-authenticated Dialogues will be read and thoroughly discussed, with a view to determining as far as possible Plato's opinions upon the principal philosophical questions. Especial attention will be given to the theory of *Ideas*. Jowett's translation of the Dialogues is used as a text-book.

[Monday and Wednesday, 2.00 P. M., B₁ O.]

[The two following courses may be taken either as studies in philosophy or as studies in Greek. Philological discussions will be introduced into both these courses in so far as such discussions may be necessary to a clear understanding of the thought involved.]

31 *Pre-Socratic Philosophy.* 2 hrs.

The sources and remains of the earliest Greek Philosophy are critically examined and interpreted with a view to explaining the origin and first developments of that line of reflective thinking which has had most influence upon modern scientific and philosophical ideas and problems.

[Wednesday and Friday, 9.30 A. M., B₁ O.]

32 *Aristotle's Metaphysics.* 2 hrs.

Selected chapters in the *Metaphysics* will be translated and interpreted. Especial emphasis will be laid upon the new and enduring conceptions which underlie Aristotle's thinking. The effort will be constantly made to understand the philosophical thought of the author, and to illustrate and criticise it by comparison with the now current thought on the same topics.

[Thursday, 2.00-3.30 P. M., B₁ O.]

Dr. DAVIES :—

33 *Patristic and Medieval Philosophy.* 2 hrs.

In this course the continuity of philosophical reflection will be studied from the time of the later Greek philosophers to Descartes. Attention will especially be paid to the influence of Christianity in modifying and transcending Greek thought ; also to the systems that grew up on the basis of theology ; and to the revival of learning which created the new spirit in science, art, ethics and religion. The value of these speculative movements for modern thought will be constantly kept in sight and critically estimated. Harnack's *History of Dogma*, with special reference to the original documents, will be a text-book for the course.

[Mondays, 2.00-3.30 P. M., A₁ O.]

For other courses dealing with the History of Philosophy, see courses 2, 14, 16, 18, 22, 27, and 34-38.

PHILOSOPHICAL CRITICISM

Professor LADD :—

34 *Kant Seminary.* 2 hrs.

A study of the Principles of Conduct and of Art upon the basis of Kant's Ethical and Æsthetical Writings—*The Critique of Practical Reason*, *Metaphysics of Ethics*, etc., and the *Critique of Judgment*. Each exercise will, in general, consist of an expository and critical lecture, to be followed by papers and discussions by the class. The effort will constantly be made not only to point out the relations in which this philosopher stands to the writings of to-day upon the same themes, but also to appreciate the value of these later writings themselves.

[Monday, 7.15-9.00 P. M., B₁ O.]

Professor DUNCAN :—

- [35 *The Philosophy of Herbert Spencer.* 2 hrs.

This course is a study of the Evolution Theory of Spencer in its psychological, ethical and metaphysical aspects. Spencer's *First Principles*, *Principles of Psychology* (selections), and *Data of Ethics* are read and discussed.

Omitted in 1901-1902.]

Professor SNEATH :—

- [*36 *Philosophy and English Literature.* 2 hrs.

The aim of this course is to acquaint the student with the questions of philosophy as treated by standard writers in English Literature. Selections from the works of Bacon, Hobbes, Locke, Shaftesbury, Butler, Berkeley, Hume, and others will be read. The course is designed to meet the needs of students of English Literature, as well as for purposes of general culture.

Omitted in 1901-1902.]

Dr. GREEN :—

- 37 *Materialism.* 2 hrs.

A historical and critical study of the philosophy of Materialism. Lange's *History of Materialism* will be read, and especial attention will be given to the works of Lucretius, Von Holbach, Büchner, and recent scientific materialism.

[Friday, 10.30-12.00 A. M., B. O.]

Dr. HESS :—

- 38 *Lotze's Microcosmus.* 2 hrs.

An expository and critical review of this classic work, which deals with such philosophical problems as evolution, the existence of the soul and its so-called "faculties," the relation of body and soul, the immortality of the soul, the mechanical and teleological views of nature, man's relation to nature, conscience and morality, the meaning of history, man as a religious being, the Being of God, the relation of God to the world, the problem of evil, etc.

[Monday and Wednesday, 11.30 A. M., B. O.]

Mr. MONTGOMERY :—

- 39 *Philosophical German.* 2 hrs.

The class will read in German Schopenhauer's *Die Welt als*

Wille und Vorstellung, and then take up the reading of current discussions in some German Philosophical Magazine.

[Monday and Friday, 2.00 P. M., A. O.]

40 *Philosophical French.*

2 hrs.

The class will read in French some of the essays in Caro's *Philosophes et Philosophie*, and then take up the reading of current discussions in some recent French Philosophical Magazine.

[Monday and Friday, 3.00 P. M., A. O.]

II. THE SOCIAL SCIENCES, HISTORY, AND LAW

WILLIAM H. BREWER, Ph.D.	ARTHUR M. WHEELER, LL.D.
WILLIAM G. SUMNER, LL.D.	CHARLES H. SMITH, LL.D.
WILLIAM K. TOWNSEND, D.C.L.	GEORGE B. ADAMS, Ph.D.
HENRY W. FARNAM, R.P.D.	WILLISTON WALKER, Ph.D., D.D.
EDWARD G. BOURNE, Ph.D.	JOHN C. SCHWAB, Ph.D.
IRVING FISHER, Ph.D.	HENRY C. EMERY, Ph.D.
FREDERICK WELLS WILLIAMS, B.A.	OLIVER H. RICHARDSON, Ph.D.
MAURICE H. ROBINSON, M.A.	WILLIAM B. BAILEY, Ph.D.
HENRY B. LEARNED, M.A.,	ALBERT G. KELLER, Ph.D.
HERBERT E. GREGORY, Ph.D.	

THE BOOCKOCK LIBRARY (founded in 1896 by Mr. and Mrs. S. W. Boockock), is a department library in the Social Sciences, which supplies students with the most rare and special works in those subjects which the University Library does not contain. Any books needed by special students will be obtained. Students of all degrees of advancement will find reference books in the Boockock Library, and are invited to apply for access to it to Prof. Sumner.

A CLUB will be formed in October, 1901, to study the Science of Society, including Anthropology (Somatic and Historical), Ethnology, Demography and Demology.

When the classes in courses *5 and *6 reach the proper degree of advancement, they are divided into squads for visits to the Museums of Anthropology and Ethnography under the guidance of competent instructors.

THE POLITICAL SCIENCE CLUB, comprising the graduate students and instructors in the social sciences, has its headquarters at 11 White Hall, which are open to members at all times. The department library there installed contains a collection of economic works generally required by advanced students. Fortnightly meetings are held during the academic year. Announcement of the subjects discussed are made in the University Bulletin.

Opportunities are given students to visit such charitable and penal institutions and agencies of social betterment as are in New Haven, or within easy access of it.

THE HISTORICAL SEMINARY ROOM, No. 90 High street, contains a reference library to which graduate students may have access at all hours.

THE HISTORICAL CLUB meets fortnightly for the reading and discussion of papers and for reports on current periodicals.

THE SOCIAL SCIENCES

Students are advised to consult with the various instructors before making their choice of courses.

The following courses are elementary, and primarily for undergraduates: 5, 6, 21, 23, 24, 27, 28, 32, 34.

The following courses are more advanced, and presuppose one or more of the elementary courses: 10, 11, 12, 13, 15, 17, 18, 20, 22, 25, 29, 30, 31, 33.

The following courses are most advanced, and primarily for graduates: 1, 2, 3, 4, 7, 8, 9, 14, 16, 19, 26, 35.

Professor SUMNER :—

[1 *Anthropology.* 2 hrs.

A careful study of Ranke's *Der Mensch* (2d ed.), with an examination of the separate topics by means of all the appropriate material.

Omitted in 1901-1902.]

[2 *The Self-Perpetuation of Society.* 2 hrs.

(Section II of Systematic Societology.) An historical and ethnological study of the evolution of the *Marriage Institution*; *mores*, taboo, idealization. The *Family*; its forms, parenthood, kinship, status of woman. Comparative legislation on domestic relations. *Population*. The history, law and policy of population.

Omitted in 1901-1902.]

3 *The Mental Reactions.* 2 hrs.

(Section IVa of Systematic Societology.) An ethnological study of the development of the *Mental Processes* and of the growth and contents of the *Mental Outfit* of the human race in

the earlier stages. Ghost-fear, daimonism, otherworldliness, knowledge and pseudo-knowledge, the aleatory element, world-philosophy, *mores*, codes, taboo, therapeutics, etc.

[Monday, 10.30, and Thursday, 9.30 A. M.]

4 *The Beginnings of the Industrial Organization.* 2 hrs.

An ethnological study of the industrial organization from its earliest beginnings. Division of labor between the sexes and the special functions of each; regulation of industry; slavery; formation of capital; discoveries and inventions; domestication of animals and plants; money, etc.

[Thursday and Friday, 10.30 A. M.]

*5 *The Science of Society.* 2 hrs.

An elementary course, with text-book lessons and examinations, in Anthropology and Ethnology, with the origin of civilization and the development of institutions.

In connection with this will be given a course of lectures on Systematic Sociology [Societology]. Topics are: The organization of society; the individual and the social; social forces; militarism and industrialism; property; marriage, family, and the status of women; primitive notions in religion and philosophy; civil government, law and rights; slavery and classes; economic interests and their collisions; conditions of welfare; origin of moral standards; reaction of reason on experience. These topics are treated exclusively in the light of Historical Anthropology and Ethnology.

[Monday and Friday, 8.30 A. M.]

*6 *The Science of Society.* 2 hrs.

A course with a German text-book (Lippert's *Kulturgeschichte*; 2 vols., Stuttgart, 1887), for those who are able to read difficult German. The exercises are coincident with those of course 5, including the lectures as above.

[Monday and Friday, 8.30 A. M.]

Professor FARNAM:—

7 *The Principles of Public Finance.* 2 hrs.

A systematic treatment of the subject of government expenditure, government income, and government debt, illustrated by references to the financial statistics and experience of modern states.

[Tuesday and Friday, 9.30 A. M.]

[8 *Social Politics.* 2 hrs.

A critical and historical study of legislation designed to better the condition of the weaker members of society, considered in its relations to self-help and voluntary activity.

Omitted in 1901-1902.]

9 *The Modern Organization of Labor.* 2 hrs. 2d term.

These lectures treat of the historical antecedents and the development during the nineteenth century of associations of wage-receivers. They therefore include an account of the structures, aims, and methods of such societies in different countries, together with a discussion of their relations to socialism, the factory system, labor disputes, labor legislation, workmen's insurance, provision for the unemployed, and other features of the modern industrial world.

Professor SCHWAB :—

[10 *Finance.* 2 hrs.

Topics covered: the history of money and banking in the United States; corporate finance and securities; public finance with special reference to American conditions.

Omitted in 1901-1902.]

[11 *Finance.* 1 hr.

Recent financial history of the United States, with a detailed study of the current money market.

Omitted in 1901-1902.]

[12 *International Trade.* 1 hr.

The theory of international trade; a short review of the commercial history of the United States; and a detailed study of the current foreign exchange market.

Omitted in 1901-1902.]

[13 *United States Public Finance.* 1 hr.

A study of United States Federal, State and local taxation.

Omitted in 1901-1902.]

[14 *Economic Research.* 1 hr.

Instruction in methods of economic research; practice in preparing bibliographies of economic subjects.

Omitted in 1901-1902.]

Professors SCHWAB and EMERY :—

[*15 *United States Industrial History.* 2 hrs.

Topics covered : history of American industries, with extended reference to tariff legislation ; the origin and growth of the modern industrial organization ; railroads and industrial combinations ; speculation and modern business methods.

Omitted in 1901-1902.]

Professor IRVING FISHER :—

16 *Economic Theory.* 2 hrs

This course will treat of the more exact theories of economics ; the theory of value and prices ; international trade ; capital and interest ; distribution ; and the application of these theories to public questions. Mathematics and statistics will be freely employed when needful. The course will open with lessons in the infinitesimal calculus.

[Tuesday and Thursday, 10.30 A. M.]

17 *Theory of Money.* 2 hrs.

This course will treat of the development of the monetary systems ; the production of the precious metals ; credit and banking ; the relation of money and prices ; the quantity theory of money ; money as a standard of deferred payments ; and cognate subjects.

[Wednesday and Friday, 10.30 A. M.]

Professor EMERY :—

18 *Taxation.* 1 hr.

Problems in Federal, State, and local taxation.

[Thursday, 11.30 A. M.]

19 *History of Economic Theory.* 2 hrs.

Special emphasis is laid on the relation of economic theory to economic history and policy. Lectures and class-room discussion of leading authors.

[Tuesday and Thursday, 12.30 P. M.]

[20 *Commercial Policy.* 1 hr.

A study of the growth of international trade and recent commercial policy. A reading knowledge of either German or French is necessary ; and a knowledge of both languages is desirable. The work of the course consists chiefly in the preparation of papers.

Omitted in 1901-1902.]

Professor EMERY :—

- *21** *Elementary Economics.* 2 hrs.

Lectures, two hours a week—for two-thirds of the year on the outlines of economic theory; for the remaining third of the year on money and monetary problems.

[Wednesday and Friday, 11.30 A. M. or 12.30 P. M.]

Professors SUMNER and EMERY, Dr. W. B. BAILEY, and Mr. ROBINSON :—

- *22** *The Financial and Industrial History of the United States.* 2 hrs.

Lectures two hours a week—during the first half of the year by Professor Emery on taxation, currency and banking in relation to American history, and by Professor Sumner on corporation finance; during the second half of the year by Professor Emery, Dr. Bailey, and Mr. Robinson on the development of American industries, the growth of industrial combinations and railroads.

[Tuesday and Saturday at 11.30 A. M.]

Dr. W. B. BAILEY :—

- *23** *Statistics.* 2 hrs.

The sources and reliability of statistical data are discussed, and the methods of distinguishing true and false inferences are pointed out. Index numbers are studied, and the lectures treat of statistics of population, crime, suicide, property, etc. The attempt is made to determine the laws which govern the group-action of men.

[Monday and Friday, 11.30 A. M. and 12.30 P. M.]

- *24** *American Social Conditions.* 2 hrs.

A critical study of the principal phenomena that are characteristic of American society. The course will deal with the problems connected with the negro, concentration of population in the large cities with the attendant dangers, immigration, poor relief, labor organizations, liquor question, etc.

[Tuesday and Saturday, 10.30 A. M.]

- 25** *Labor System.* 1 hr.

The various theories concerning the payment of labor, the conflicts between capital and labor, strikes, lock-outs, coöperation, profit-sharing, arbitration, compulsory insurance, and the

various plans for the amelioration of the condition of the workman. Each member of the class will make a special investigation of some assigned topic.

[Saturday, 9.30 A. M.]

26 *The Economic Systems of Classical Antiquity.* 1 hr.

A critical study is made of the political and social institutions of Greece and Rome. The lectures treat of the income and expenditure of the state, the currency, credit instruments, poor relief, slavery, land tenure, commerce, trade regulations, marriage institutions, etc.

[Tuesday, 9.30 A. M.]

Mr. ROBINSON :—

*27 *Comparative Politics.* 2 hrs.

An elementary course involving a comparative study of the organization and working of the important constitutional states, England, France, Germany, Switzerland, etc. Assigned readings and lectures upon the following topics: the nation, present nationalities, and national political character; the state, its organization in the constitution, its nature, origin, forms and functions, political and economic; government, its relation to the state, and to the individual; the organization and development of modern governments.

[Tuesday and Thursday, 3.00 P. M.]

*28 *Municipal Politics.* 2 hrs.

A study of the organization of the modern municipality, its practical working and its problems. Its relation to the state, to the individual and to industrial activity. In connection with the general treatment of the subject a special study will be made of the organization, administration and working of typical municipalities both American and European. Lectures, text-books and essays.

[Monday and Friday, 11.30 A. M.]

29 *Industrial Combinations.* 2 hrs.

A study of the modern tendency toward the concentration of interests in trade, transportation, and industry; the forms of industrial organization; the relation of aggregated capital to investors, wage-earners, competitors, and consumers; the various plans for regulating and controlling capitalistic monopolies.

Lectures, readings, and the preparation of theses upon the development of characteristic combinations.

[Wednesday and Friday, 10.30 A. M.]

[30] *Industrial Policy.* 2 hrs.

An historical and critical study of the state in its relation to industrial activity. The experience of modern states in the regulation, control, and operation of industry, together with an investigation of the results of municipal ownership of public utilities. Lectures, assigned readings, and the preparation of papers upon topics within the scope of the course.

Omitted in 1901-1902.]

Assistant Professor GREGORY and Dr. KELLER :—

31 *Environmental Influences on Man.* 2 hrs.

First term (Dr. Gregory): The relation of man to nature : a study of topography, climate, distribution and character of fauna, flora, building material, etc., as factors which influence man's physical development and manner of life.

Second term (Dr. Keller): Social environment, including the interrelation of primitive and early societies, and of societies unequally advanced in civilization. Especial attention will be given to the contact of civilized with uncivilized races consequent to national expansion and colonization.

[Monday and Friday, 12.30 P. M.]

Dr. KELLER :—

*32 *Ethnology.* 2 hrs.

A study of existing nations and tribes ; their manners, customs, etc. ; analysis and comparison of national traits. The course will deal chiefly with the life of savage or partially civilized peoples, such as the Indians of America. Keane's *Ethnology* will be used as a text-book, and will be supplemented with lectures, papers and the examination of the ethnological collections of the Peabody Museum.

[Monday and Wednesday, 11.30 A. M.]

33 *Colonization (Economic and social.)* 2 hrs.

The economic and social questions of colonization. A preliminary sketch of ancient and mediæval expansion and colonization, followed by a closer study of the experience of the

various modern colonizing states. English and foreign textbooks will be used; ability to read Spanish or Dutch will be of advantage.

[Monday and Friday, 3.00 P. M.]

Professor TOWNSEND :—

*34 *American Government.*

1 hr.

This course is intended to give a general knowledge of the political status of the American citizen and of his rights and obligations. Federal and State constitutions and laws will be discussed in order to show how the government is organized, and how its checks and balances operate to preserve its integrity, and to protect the rights of the people under it. Among the subjects to be considered are town, city, State and Federal government, and the relation of the citizen thereto; the functions of courts of justice; the legal aspects of and constitutional limitations upon monopolies, trusts, boycotts, strikes, granger and anti-trust legislation, taxation, corporations; eminent domain; *habeas corpus*; jury trials; admiralty; patents; copyright; trade-marks. The development of American positive law and international law will be examined in connection with a discussion of current events and present political conditions.

Frequent written tests will be required on assigned courses of reading.

[Saturday, 8.30 A. M.]

For a course in *Roman Law* see IV, 43.

HISTORY

Professors ADAMS and BOURNE :—

35 *Methods of Historical Research and Criticism.*

1 hr.

The first half of this course consists of lectures and discussions on the principles of historical criticism, for which Langlois and Seignobos' *Introduction to the Study of History* will serve as an outline. A few typical problems of internal and external criticism will be examined by the class and thoroughly analyzed. The second half, conducted by Professor Adams, consists of practical exercises in the study of selected historical documents, so arranged as to furnish examples of all the important points of method. The weekly exercises in this course may occupy two hours.

[Monday, 3.00 P. M.]

Professor BREWER :—

36 *Physical Geography in its relation to History.*

1 hr. 2d half of 2d term.

A course of about ten lectures discussing the following topics : the relations of man to the region he inhabits ; physical geography as related to the development of civilization ; natural aids to the defence and protection of communities ; natural facilities for commerce ; the effect of these several factors on the history of nations ; and the modification of these natural conditions by modern science and invention.

[Thursday, 10.30 A. M.]

Assistant Professor F. W. WILLIAMS :—

*37 *Ancient Oriental Nations from the earliest times.* 2 hrs.

A comprehensive survey of the beginnings of civilization, and its development among the principal nations of antiquity, including Babylonia, Assyria, Egypt, Phoenicia, and Media. This course illustrates the connection of Biblical and profane history, discusses the origins of political and social institutions, religions, the arts and sciences, and the Asiatic sources of European civilization, and constitutes an introduction to the study of history.

[Monday and Wednesday, 12.30 P. M.]

Professor PERRIN :—

*38 *Outline Survey of Ancient History.* 1 hr.

Lectures, based on manual study, outlining and emphasizing such general features of ancient history as are most valuable for the intelligent prosecution of medieval history. Oriental history is presented only as background and source for Greek and Roman History.

[Wednesday, 8.30 A. M.]

Professor PERRIN :—

39 *Greek History.* 2 hrs.

The historical works of Herodotus, Thucydides, and Xenophon. Analysis and characterization of the works of these historians, involving the reading of copious extracts in the original, and of the entire remainder in English translation.

Professor ADAMS:—

*40 *Medieval History (first half).* 2 hrs.

From the beginning of the fourth to the tenth century. The subjects most fully discussed will be the fall of Rome; the spread of Christianity; the foundation and organization of the new German states; the beginning and growth of the papal power; the formation of the Frankish state; the rise and conquests of Mohammedanism; the empire and reforms of Charlemagne; and the separation of his empire into the modern states.

The development of civilization will be kept constantly in view throughout, and such institutions of both church and state as exerted an influence upon later times will receive especial attention.

[Tuesday and Thursday, 9.30-10.30, A. M., C Alumni Hall.]

[This course alternates with the following.]

[*41 *Medieval History (second half).* 2 hrs.

From the beginning of the tenth to the middle of the fifteenth century.

The earliest organization of the modern states; feudalism and feudal society, considered institutionally and economically; the Holy Roman Empire and the monarchical papacy; the crusades and their results; the growth of commerce and the rise of the third estate to political influence; the intellectual renaissance of the thirteenth century, with the beginning of universities and the revival of Roman Law; the rise of England and France with contrasted constitutions, the conflict between them and the decline of Germany; and the beginning of modern diplomacy.

Omitted in 1901-1902.]

[42 *Medieval Institutions.* 2 hrs.

A two years' course. Not a lecture course. A rapid reading knowledge of Latin, German, and French is required. The student is made acquainted with the literature of the subjects treated and with the collections of original material. He is expected to investigate selected topics in the sources and to report to the class upon them, and especial attention is paid to the principles of criticism and to methods of research.

a. The first year's course considers later Roman and early German institutions, and their combination in the Frankish state; the development of the papal power and its special institutions; the institutions of Charlemagne's empire; the origin of feudalism; and the beginnings of national governments.

b. In the second year especial attention is given to the institutions of completed feudalism ; to those produced by the communal movement in different countries ; and to the rise of modern judicial, legislative, and administrative institutions.

Omitted in 1901-1902.]

In 1900-1901, a third year was devoted to the detailed study of English institutions of the Norman and early Angevin periods with particular reference to the origin of the English constitution, and this may be repeated.

Professor WALKER :—

- 43 *French Constitutional Development from Louis VI. to Louis IX.* 1 hr. 2d term.

The aim of this course is to trace the growth of the power of the French during one of the most significant periods in its development ; to discuss the methods by which the authority of the crown was extended ; and to examine the constitution and activities of the more important organs of government. The course will be conducted according to the *seminar* method, and large use will be made of the original sources.

Assistant Professor F. W. WILLIAMS :—

- *44 *Medieval Asia and the Mohammedan Conquest.* 2 hrs.

An attempt to supplement the history of Medieval Europe by following the events in Western Asia during the period between Alexander's death and the capture of Constantinople, 1453. The course exhibits the gradual effacement of Hellenic influences in Asia, the continual contest between Rome and the East, and the secular antagonism between Oriental and Occidental civilization. It takes up in succession the Parthian and Sassanid Empires, follows the rise of Islam and its extension under the Saracens and Turks, and shows the influences of Asiatic culture upon modern Europe.

[Tuesday and Thursday, 11.30 A. M.]

Mr. LEARNED :—

- 45 *The Early Italian Renaissance. (1300-1500).* 2 hrs.

This course is offered as an introduction to the period of the Reformation, more particularly, as a consideration of the facts and tendencies in Italian thought which have some bearing on the history of western Europe. For clearness it may be divided

into three parts : (i) Political theorists from Dante to Machiavelli. (ii) The meaning of Italian Humanism, particularly as seen in the writings of Petrarch. (iii) The age of Lorenzo de Medici as an expression of the Italian Renaissance. Students will be asked to read parts of Dante's *De Monarchia*, parts of the *Defensor Pacis* of Marsiglio of Padua, and of Machiavelli's *Il Principe*. Voigt's *Die Wiederbelebung des classischen Alterthums* and Gaspary's *Die italienische Literatur der Renaissancezeit* (the first part of Gaspary's book is in an English translation) afford estimates of the period as marked by the revival of learning.

Assistant Professor RICHARDSON :—

*46 *The Renaissance and the Reformation.* 1 hr.

In this course the Renaissance and Reformation will be treated primarily as intellectual movements and considered in their relations to the intellectual development of Europe ; political history will be noticed in so far only as is essential.

The course differs radically in character from Courses *47 and *48 and does not cover the same ground.

Students will be required to do much work in the library.

[Wednesday 8.30 A. M., C₁ Alumni Hall.]

Assistant Professor RICHARDSON :—

[*47 *History of Northern Europe from the Reformation to the death of Frederic the Great.* 2 hrs.

This course will deal chiefly with the following topics : the Reformation in Germany and the States of Northern Europe ; the Revolt of the Netherlands, with a brief sketch of the decline of Spanish power ; the Counter-Reformation ; the Thirty Years War, with especial reference to its effect upon the institutions of the Empire and the subsequent policy of the foremost German states ; Sweden as a Great Power, its rise, progress and decline ; the Northern War ; Russia, with especial reference to the reigns of Peter the Great and Catherine II., to the partition of Poland and the Turkish question ; and the history of Brandenburg-Prussia.

During the first half of the course the center of interest will be found in the religious and political rivalries of the era of the Reformation ; in the latter half, in the history of Brandenburg-Prussia from the time of its rapid economic, political, and military development under the Great Elector and Frederic William I. to its acquisition of world-power under Frederic the Great in contest with Austria and France.

Considerable attention will be given to the history of the Prussian constitution and to topics of economic interest, such as the decline of the Hanseatic League, the economic results of the Thirty Years' War, and the development of the resources of Brandenburg-Prussia by its greatest rulers.

Lectures and collateral reading.

This course is omitted in 1901-1902. It alternates with course *48.]

*48 *History of France from the Reformation to the French Revolution.*

2 hrs.

This course will deal not only with the internal history of France, but also with its relations to the larger problems of modern European history—the progress of the Reformation and the Counter-Reformation, the formation and development of the modern European state-system, colonial expansion, the great wars and treaties of the modern epoch, and the growth of political and economic science.

In the internal history of France, especial attention will be paid to the character and development of political and social institutions; the era of the Civil Wars, with their religious and dynastic rivalries; Henry IV. and Sully; Richelieu and Mazarin; the age of Louis XIV. and its representative ideas; and the political and intellectual movements preparatory to the Revolutionary epoch.

Lectures and collateral reading. This course alternates with course *47.

[Monday and Thursday, 12.30 P. M., C Alumni Hall.]

49 *Studies in the Reign of Louis XIV.*

1 hr.

Attention will be paid to the constitutional Fronde, the political training and governmental methods of the king, and the development of political theory.

The work will consist largely in the reading and criticism of characteristic passages in the writings of Louis XIV., Cardinal de Retz, Saint-Simon and Bossuet. Use will also be made of the correspondence of the time.

Professor WHEELER:—

50 *History of Treaties, 1763-1815.*

1 hr.

[Wednesday, 5.00 P. M.]

- *51 *History of Europe since 1789.* 2 hrs.
Mainly political, introductory to European politics of our day.
[Tuesday and Thursday, 9.30 A. M.]
- [52 *Investigation of special topics in European History
from 1789 to 1815.* 1 hr.
A general knowledge of the period, and ability to read French
or German easily, are required.
Omitted in 1901-1902.]

Professor ADAMS (first half-year) and Assistant Professor
RICHARDSON (second half-year) :—

- *53 *English History.* 3 hrs.
Political and constitutional. Particular attention will be given
to the development of political and judicial institutions, and in
the second half to the colonial expansion of England. The
more important constitutional documents will be discussed in
detail as well as such other contemporary sources as are acces-
sible. While this course is of special value to those who intend
to study law, the interest of the general student will also be
kept in view.
[Monday, Wednesday, Friday, 10.30 A. M.]

Assistant Professor RICHARDSON :—

- 54 *English History from the accession of the Tudors to the
reign of William and Mary.* 2 hrs.

A research course which extends through two years and lays
more stress upon the constitutional than upon the political side
of the subject. Construction of bibliographies, and reports
based upon independent investigation of the sources, form an
important part of the work.

a. The course for the first year embraces the period between
1485 and 1603. The reigns of Henry VII., Edward VI., and
Mary are treated with comparative brevity in lectures, with
assigned readings from primary and secondary sources, while
particular attention is paid to constitutional developments under
Henry VIII. and Elizabeth. [Course a is not given in 1901-
1902].

b. The course for the second year embraces the period between
1603 and 1688. In 1901-1902 the reigns of James I. and Charles
I. will receive especial consideration. The work consists in

large part of a systematic study of the documents contained in Prothero's *Statutes and Constitutional Documents*, and Gardiner's *Constitutional Documents of the Puritan Revolution*.

Professor WHEELER :—

- 55 *Constitutional History of England since 1760.* 1 hr.
Lectures and required reading.

Professor BOURNE :—

- *56 *American History [1492-1763].* 2 hrs.

This course will deal with the history of the American Colonies from the beginning of the discoveries until the beginning of the American Revolution. The nature and objects of colonies, the character and aims of the colonists, the political, economic, and social development of the colonial communities will be the leading topics.

The course will include a brief survey of the French and Spanish Colonial establishments in America. Lectures, required reading and the study of selected documents.

[Tuesday and Thursday, 9.30 A. M.]

- *57 *American History [1765-1860].* 2 hrs.

A general course in the political History of the United States from the beginning of the Revolution to the Civil War. The causes and progress of the Revolution, the formation of the Union, the rise and growth of parties, the development of democracy, the influence of the westward expansion and of slavery on political life, and the origin and significance of the more important economic questions will be discussed. Lectures, outside reading and bibliographical practice.

[Monday and Friday, 10.30 A. M.]

Professor C. H. SMITH :—

- *58 *American History [1860-1900].* 2 hrs.

Political and Constitutional History of the United States from the beginning of the Civil War to the present time. In its political features this is a continuation of course 57. In its constitutional features, dealing mainly with the states in their federal relations, it is a continuation of course 61.

[Tuesday and Thursday, 9.30 A. M.]

Professor BOURNE:—

- 59 *The American Revolution and the Formation of the Union.* 2 hrs.

After a brief survey of the English Colonial system as it existed in the first half of the eighteenth century, the causes and progress of the Revolution will be taken up in detail. Considerable attention will be given to the political theories of the time, and to the influence of the Revolution in Europe.

In the second part of the course especial attention will be given to the political and economic forces making for a more compact union and to the contemporary political discussion.

- [60 *Diplomatic History of the United States.* 2 hrs.

History of the foreign relations of the United States from the end of the Revolution to the close of the Civil War. Special attention is given to the relations with Spanish America and to the annexations of territory. A reading knowledge of Spanish will be useful for the prosecution of this course.

Omitted in 1901-1902.]

Professor C. H. SMITH:—

- 61 *American History (Constitutional).* 1 hr.

An historical study of the Federal Constitution, mainly of the Articles relating to the General Government in its three departments, Legislative, Executive, and Judicial.

[Friday, 10.30 A. M., D₂ O.]

- 62 *American State Constitutions.* 1 hr.

An historical study of the State Constitutions in their origin and development.

[Tuesday, 10.30 A. M., D₂ O.]

Assistant Professor F. W. WILLIAMS:—

- *63 *Modern Asiatic History.* 2 hrs.

A course embracing successively the regions of India, Japan, China, and Central Asia, with particular regard to their history since the seventeenth century, their governments, and their relations with European powers. The culture, faiths, and sociology of existing nations in the Far East are here considered with a view of interesting those whose historical knowledge is confined to the Western world. The course is designed to stimulate further

reading by students in special topics suggested by the instructor, upon which written essays will be presented and discussed. It also offers an opportunity for those who contemplate missionary careers to acquaint themselves with the political and social conditions of the more important foreign missionary fields.

[Tuesday and Thursday, 12.30 P. M.]

*64 *European Colonies in Asia and Africa.* 2 hrs.

The history of colonization as undertaken and systematized by European nations in modern times especially in regions already populated. In connection with the causes leading to the acquisition of colonies the development of the colonial administration of each of the great powers is treated in turn. The course will involve the investigation of special subjects assigned by the instructor and the critical discussion of brief theses written upon them.

(For the sociological aspects of modern colonization see course No. II 33, given by Dr. Keller.)

[Monday and Wednesday, 11.30 A. M.]

65 *Diplomatic Intercourse with Asiatic Nations.* 2 hrs.

A special study of the relations between the states of Eastern Asia, Europe and America during the second half of the nineteenth century.

Professor WALKER :—

66 *General Church History.* 3 hrs.

The aim of this course for the year 1901-2 is to present an outline of church history from the establishment of Christianity to the end of the Crusades. Special attention is paid to the spread of Christianity, the conversion of the Roman Empire, Monasticism, the effects of the Germanic invasions, and the efforts of the Church for the Christianization of northern and eastern Europe, the rise of the Papacy, its conflict with the Empire, and the Crusades.

III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.

EDWARD L. CURTIS, Ph.D., D.D. FRANK C. PORTER, Ph.D., D.D.
BENJ. W. BACON, Litt.D., D.D. FRANK K. SANDERS, Ph.D., D.D.
CHARLES C. TORREY, Ph.D. CHARLES F. KENT, Ph.D.
WARREN J. MOULTON, B.D., Ph.D. MEYER WOLODARSKY, Ph.D.

Connected with the department are the Seminary rooms, the Reference Libraries, the Special Collections and the Semitic and Biblical Club.

THE SEMINARY ROOM in Fayerweather Hall is adjacent to the two recitation rooms used by the department. It contains a good reference library in Biblical Literature, and can be utilized for purposes of study at all times.

A REFERENCE LIBRARY, available for special students, beside the departmental library proper yet situated very near to it, is the Trowbridge Reference Library of the Divinity School. It contains more than 3,000 carefully selected volumes, and is particularly rich in works of reference for Biblical study.

THE SALISBURY COLLECTION of Oriental manuscripts, books and works of reference, the library of the American Oriental Society, the collection of rare and valuable Arabic manuscripts, made by Count Landberg, acquired recently for Yale University through the munificence of Morris K. Jesup, Esq., of New York City, and the well-stocked Semitic sections of the general Library furnish exceptional advantages and opportunities for independent research to the student of Semitic literature.

For courses in Hellenistic Greek, compare the announcement of the Department of Classical Philology. For courses in Oriental History, compare courses 3 and 14 in the Department of Economics and History.

THE SEMITIC AND BIBLICAL CLUB, composed of the instructors, the students who are studying for a degree, and

others who are interested in the work, holds stated semi-monthly meetings, at which papers on subjects of interest to Biblical students are presented and discussed.

HEBREW

Professor CURTIS :—

- 1 *Elementary Hebrew.* 4 hrs.
The year's work includes a mastery of the elements of Hebrew and the translation of Genesis.
- 2 *The Book of Job.* 1 hr.
The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.
- [3 *Selections from Proverbs, and the Five Megilloth.* 1 hr.
The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.
Omitted in 1901-1902.]
- 4 *Selections from the Psalter.* 2 hrs. 1st term.
The grammatical and historical exegesis of the text, with attention to New Testament interpretation and homiletical application.
- 5 *The Book of Isaiah.* 2 hrs. 2d term.
The grammatical and historical exegesis of the Hebrew text.

Professor SANDERS :—

- [6 *The Textual Criticism of the Old Testament.* 2 hrs. 2d term.
A close textual study of some one of the later Prophets making use of the apparatus of the Lower criticisms to restore the original text, together with lectures on the apparatus, methods, and history of Old Testament criticism.
Omitted in 1901-1902. Similar work is offered in course 12.]

Professor KENT :—

- 7 *Advanced Hebrew.* 2 hrs. 1st term.
The reading of the Books of Samuel and a thorough review of the elements of Hebrew grammar. This course continues course 11.
[Monday and Friday, 3.00 P. M.]

- 8 *Hebrew Sight Reading.* 2 hrs. 2d term.
Rapid reading of portions of Jeremiah, Ezekiel and Isaiah xl to lxvi, and selections from the historico-prophetical books. Assignment of special passages for critical study. Two hours of sight reading will count as one of these hours.
- [9 *The Minor Prophets.* 1 hr.
Critical translation and interpretation, with a special study of the political, social and religious teachings of each prophet.
Omitted in 1901-1902.]
- [10 *Hebrew Syntax.* 2 hrs. 1st term.
A study of the principles of Hebrew Syntax, with the reading of a variety of passages with special reference to a syntactical interpretation.
Omitted in 1901-1902.]

Dr. MOULTON:—

- 11 *Elementary Hebrew.* 2 hrs.
A study of the elements of the Hebrew language in connection with the reading of Genesis i-viii and of selected passages of easy Hebrew.
[Tuesday and Friday, 3.00 P. M.]
- 12 *The History of the LXX. and its Use in Criticism.* 1 hr.
A discussion of the means available for the textual criticism of the Old Testament, especially the Greek translations, their history, and the problems which they present, followed by readings from First Samuel with reference to the variations of the Greek versions.

COGNATE SEMITIC LANGUAGES

Professor TORREY:—

- 13 *Elementary Arabic.* 2 hrs.
The elements of Arabic grammar, including exercises in writing. Rapid reading of easy prose extracts. The text books used will be Socins' *Grammar* (2d edit.) and Brünnow's *Chrestomathy*.
[Tuesday and Thursday, 3.00 P. M.]
- 14 *The Qurân.* 2 hrs. 1st half-year.
Reading of selected suras, with a supplementary study of the life of Mohammed.

[15 *The Arabic Historians.*

The reading of Ibn Hishâm's account of the battle of Bedr.
Omitted in 1901-1902.]

16 *Arabic Poetry.*

2 hrs. 2d half-year.

The reading of selections from Nöldeke's *Delectus Veterum Carminum Arabicorum*.

17 *Elementary Assyrian.*

2 hrs.

The aim of the course is to give the student a good introduction to the Assyrian language and literature. Especial attention will be given to practice in reading both cuneiform and transliterated texts. The text-books used will be Lyon's *Assyrian Manual*, 2nd edition, and Delitzsch's *Lesestücke*, 4th edition, 1901.
[Tuesday and Thursday, 4.00 P. M.]

18 *Assyrian Historical and Mythological Texts.*

2 hrs. 2d half-year.

Rapid reading of selected texts, with supplementary study of Assyro-Babylonian history and literature.

19 *North Semitic Inscriptions.*

2 hrs. 1st half-year.

The Moabite stone; the Siloam inscription; the Zenjirli monuments, and other old Aramaic remains; selected Phœnician and Palmyrene inscriptions; coins with old Semitic legends. The aim of the course is to acquaint the student with some of the monuments which are especially important for the study of the Old Testament languages and history, and to provide a brief general introduction to North-Semitic epigraphy.

20 *Elementary Ethiopic.*

2 hrs. 2d half-year.

The elements of Ethiopic, using Praetorius's *Äthiopische Grammatik* and Bachmann's *Lesestücke*.

21 *Advanced Ethiopic.*

2 hrs. 2d half-year.

Reading of the *History of the Martyrs of Nagrân* (Pereira's edition of 1899).

22 *General Introduction to Semitic Philology.*

1 hr.

A general view of the Semitic languages and peoples, including a brief survey of their literatures. No special knowledge of the Semitic languages, beyond an elementary knowledge of Hebrew, is required for this course.

[Monday, 2.00 P. M.]

Professor KENT :—

- 23 *The Discovery and Decipherment of Ancient Inscriptions.* 1 hr.
 A view of the history of excavations in ancient Assyria, Babylonia, Syria, and Egypt, with a study of the problems and methods of the modern excavator. A survey of the different forms and types of Semitic and Egyptian inscriptions and the history of their decipherment.
 [Monday, 5.00 P. M.]

Dr. MOULTON :—

- 24 *Elementary Syriac.* 2 hrs.
 The principles of the language, with reading of selections in Brockelmann's *Syrische Grammatik*.
- [25 *Advanced Syriac.* 2 hrs.
 A continuation of course 24, reading historical selections.
 Omitted in 1901-1902.]
- [26 *Biblical and Palestinian Aramaic.* 2 hrs.
 A study of Biblical Aramaic using Marti's *Aramäische Grammatik*, and of Palestinian Aramaic using Dalman's *Grammatik*.
 Omitted in 1901-1902.]

BIBLICAL LITERATURE

Professor CURTIS :—

- 27 *Ancient Traditions and History of the Jewish People.* 1 hr.
 Studies in history and archaeology with the view of determining the meaning and historical value of the Biblical records.
- 28 *Analysis and Exposition of Isaiah, Jeremiah, and Ezekiel.* (English Bible.) 2 hrs. 2d term.
- [29 *Analysis and Exposition of the Twelve Minor Prophets.* (English Bible.) 2 hrs. 2d term.
 Omitted in 1901-1902.]
- 30 *Old Testament Introduction.* 1 hr.
 A brief survey of the history of the canon, text, and versions, followed by special introduction to the Hexateuch and remaining Old Testament books. Lectures.
- 31 *Problems of Hexateuchal Criticism.* 1 hr. 2d term.
 A consideration of the problems of Hexateuchal criticism.

Professor PORTER :—

32 *Biblical Theology of the Old Testament.*

2 hrs. 2d half-year.

A history of the religion of Israel from its beginning to the time of Christ. Special attention is given to the work and teachings of the several Prophets, to the significance of the Exile, and to the nature and history of post-exilic Judaism.

33 *Biblical Theology of the New Testament.*

3 hrs.

The teaching of Jesus is examined in its individuality and in its historical relations and significance. The theology of the Apostolic age is then studied, with special reference to the sources, character, and influence of the thought of Paul, and the problems of the Johannine theology.

34 *Jewish Religious Thought in the Time of Christ.*

2 hrs. 1st half-year.

Tendencies and problems in the life and thought of Judaism (Palestinian and Hellenistic) in the N. T. times; its speculations about the world and the future; its religious and ethical conceptions. A lecture course, with prescribed readings in the literature of the period.

35 *The Ethics of Judaism.*

1½ hrs.

A study of the origin and character of Jewish Ethics, the influence of Greek upon Hebraic conceptions and the relation between Jewish and primitive Christian ethical teachings. A seminar course.

Professor BACON :—

36 *The Pauline Epistles.*

3 hrs. 1st term.

Grammatico-historical exegesis of Galatians with a comparison of the Pauline system.

37 *The Epistles of the Captivity.*

1 hr. 1st term.

A study of the higher Christology of Paul in Ephesians with a comparison of Colossians, Philemon, and Philippians.

38 *Synoptic Gospels.*

3 hrs. 2d term.

Historico-critical exegesis of the gospel of Mark with a comparison of the synoptic tradition.

- 39 *New Testament Encyclopedia.* 1 hr. 2d term.
Lectures on the philological and historical apparatus for New Testament exegesis, textual criticism and history of the New Testament Canon.
- 40 *The Book of Acts.* 2 hrs. 1st term.
Critical reading of the Book of Acts with application of the principles of historical and documentary criticism.
- 41 *The History of New Testament Literature.* 2 hrs. 2d term.
Lectures by way of special introduction to the several New Testament books.
- 42 *The Catholic Epistles.* 2 hrs.
Discussion of problems of criticism and exegesis. During the first term the first epistle of Peter will be read; during the second term the epistles of James, Jude, and second Peter.
- 43 *The Johannine Literature.* 2 hrs.
A critical study of the origins of the Fourth Gospel and the Johannine epistles. Research into the type of thought represented, the sources and character of the evangelic tradition followed and the types of doctrine antagonized. *Seminar method.*

Professor SANDERS :—

- 44 *Old Testament Prophecy.* 2 hrs. 2d half-year.
A rapid but thorough study of the prophetic literature of the Old Testament, chronologically arranged, stress being laid upon the distinctive message of each prophet for his own age, on the contribution of each to constructive religious thought and on the gradual attainment of permanent religious ideas and ideals.
- [45 *Hebrew Wisdom Literature.* 2 hrs. 2d half-year.
An investigation (on the basis of the English translation) of the forms of Hebrew reflective literature and a comparison with the similar literature of other nations. The course will include an interpretation both of the biblical books of Proverbs, Ecclesiastes, and Job, and of the apocryphal books of Ecclesiasticus and the Wisdom of Solomon, and a consideration, both of the wisdom writers as a class and of the importance of this literature in the history of religious thought.
Omitted in 1901-1902.]

Professor KENT :—

46 *Biblical Literature and History (Pre-exilic).* 2 hrs.

A constructive survey of the literature and history of the Hebrews until the Babylonian exile, 586 B. C., each Old Testament book being considered in the light of the conditions and problems of the age in which it was written. The history of the Hebrews is studied in connection with that of the contemporary people of Western Asia and the development of their political, social, and religious institutions is carefully traced. The course aims in general (1) to acquaint the student with the significant facts and forces of ancient Semitic, and especially Israelitish history, (2) to give a thorough familiarity with the origin, literary form, and essential thoughts of the Old Testament books, and (3) to promote an intelligent appreciation of their ethical and religious teachings. This course is intended to serve as a general introduction to the historical, literary, and religious study of the Bible.

[Thursday and Saturday, 9.30 A. M.]

47 *Biblical Literature and (History Post-exilic).* 2 hrs.

A survey of Biblical history and literature from the period of the exile, 586 B. C., to the close of the first Christian century, including the books of the Old Testament not considered in course 46, some apocryphal literature and the whole of the New Testament. This course is complete in itself, while, with course 46, it covers the entire Bible, and the whole range of Asiatic history down to the Roman domination, as far as it relates to Biblical history. Especial attention is given to the life and thought of Judaism and to the origin, development, and fundamental teachings of Christianity.

[Wednesday and Friday, 10.30 A. M.]

48 *Israelitish Laws and Institutions.* 2 hrs. 1st half-year.

A chronological arrangement of the different codes and a systematic codification and interpretation of the laws found in the Old Testament. With this classification as a basis, the origin, development, and significance of the social, political, and religious institutions of the Israelites are studied and compared with the essays of other ancient peoples.

[Wednesday and Friday, 5.00 P. M.]

[49 *Hebrew Poetic Literature.* 2 hrs. 1st half-year.

Investigation (on the basis of the English translation) of the different characteristics and types of Hebrew poetry, compari-

son with other examples of Semitic poetry and a careful study of the relation of literary form to interpretation. A general survey of the entire field of Hebrew poetical literature, with special attention to the origin, structure, and interpretation of the Psalter.

Omitted in 1901-1902.]

Professors SANDERS and KENT :—

50 *Biblical Seminary.* 2 hrs.

A course intended to train students, for patient, accurate and independent investigation of Biblical questions. The course is very informal, the class meeting at regular intervals to report and compare results of individual study of themes assigned by the instructor.

Among the subjects to be considered in 1901-1902 are the origin and value of the traditions of the Hebrews and a comparison of the methods, ideas, and aims of the prophetic, priestly, and wisdom writers.

Dr. MOULTON :—

[51 *Studies in the Gospels.* 1 hr.

A survey of the characteristics of the gospels which throw light on their origin and interpretation, followed by the construction of a life of Christ from the data given in the gospels.

Omitted 1901-1902.]

52 *The Life and Epistles of Paul.* 1 hr.

A study of the life of the apostle Paul, and of the principal Pauline epistles taken in their probable order of writing.

[Thursday, 2.00 P. M.]

[53 *Maccabean History and Literature.* 1 hr.

A survey of the history and literature of the period from the death of Alexander the Great, 323 B. C., to the conquest of Palestine by Pompey, 63 B. C.

Omitted in 1901-1902.]

54 *Reading of Theological German.* 1 hr.

The reading of Wellhausen's *Israelitische und Jüdische Geschichte*, 3d edition.

Dr. WOŁODARSKY :—

55 *Readings in Post-Biblical Jewish Literature.* 2 hrs.

A sight-reading course in Rabbinic and Talmudic literature with discussions of the later Jewish interpretation of Hebrew law.

Students in this course must have gained a working knowledge of Hebrew and Aramaic.

56 *Modern Hebrew Literature.* 1 hr.

The class reads some standard historical novel by a modern writer, which affords practice in the reading of Hebrew and an insight into Jewish life and ideas.

Only a good elementary knowledge of Hebrew is necessary for this course.

IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY

TRACY PECK, M.A.	HENRY P. WRIGHT, Ph.D., LL.D.
BERNADOTTE PERRIN, Ph.D., LL.D.	THOMAS D. SEYMOUR, LL.D.
EDWARD P. MORRIS, M.A.	HENRY R. LANG, Ph.D.
THOMAS D. GOODELL, Ph.D.	E. WASHBURN HOPKINS, Ph.D.
HORATIO M. REYNOLDS, M.A.	HANNS OERTEL, Ph.D.
CECIL K. BANCROFT, B.A.	JAMES W. D. INGERSOLL, Ph.D.
T. WOOLSEY HEERMANCE, Ph.D.	GEORGE D. KELLOGG, Ph.D.
SHERWOOD O. DICKERMAN, B.A.	CHARLES U. CLARK, B.A.

Students in this department have at all hours unrestricted use of the departmental library. This is in Phelps Hall, near the classical seminary rooms, in a large and well lighted apartment amply supplied with tables and private lockers. It now contains nearly three thousand volumes, and additions are made each year, so that the student finds here practically everything needed for ordinary work in the courses in classical philology, except some periodicals and expensive illustrated works, easily accessible in the University library.

THE CLASSICAL CLUB, consisting of the instructors and students in the department, meets in the library room every Saturday evening, to hear reports and papers in the field of classical philology, or to read and discuss the work of some Greek or Latin author. During the year 1901-1902 the authors read will be Herodotus and Juvenal.

Graduate students of this University who are approved by the classical instructors are admitted without charge to the American Schools of Classical Studies at Athens and in Rome.

A series of lectures, one a week through the year, on the history, encyclopedia, and methodology of classical studies, will be given by several of the instructors in coöperation.

Attention is called to the following allied courses in other departments:

In Ancient Philosophy : Courses I, 28 (Ancient Philosophy) ; 29 (Plato's Philosophical System) ; 30 (Pre-Socratic Philosophy) ; 31 (Aristotle's Metaphysics).

In Ancient History : II, 38 (Outline Survey of Ancient History).

In Economics : II, 26 (The Economic Systems of Classical Antiquity).

In Phonetics : I, 8 (Experimental Phonetics).

In the History of Philology : II, 14 (The Renaissance and the Reformation) ; V, 20 (Petrarch and Boccaccio).

In Literature : V, 22 (Fable Literature in the Middle Ages).

Of the following courses those bracketed will be omitted in 1901-1902, but are likely to be offered the next year.

1 *Classical Seminary.* 2 hrs.

The members are expected to read French and German freely, and to have read widely in Greek and Roman literature.

[Wednesday, 4.00-6.00 P. M., 23 Phelps Hall.]

(a) Professor SEYMOUR :—

Pindar and Bacchylides. 1st half-year.

Critical, exegetical, and historical studies in selected odes of Pindar and Bacchylides.

(b) Professor OERTEL :—

Defective and Composite Inflections in Latin. 2d half-year.

A study of the inflectional systems illustrated by (1) the type *coepi*, and (2) the types *bonus*, *melior*, *optimus*, and *furio*, *insanivi*. (Osthoff's *Suppletivwesen*.)

GREEK.

Professor PERRIN :—

2 *The Wasps of Aristophanes.* 2 hrs.

Introduction to the critical and historical study of Aristophanes. Establishment of the text of the *Wasps*, and exhaustive

interpretation of the same; elements and forms of Old Athenian Comedy; reflections of Aristophanic comedy in Roman and modern comedy.

Professor SEYMOUR :—

- 3 *Plato.* 3 hrs.

The *Republic*, and portions of the other dialogues which are most important for its elucidation.

[Monday and Friday, 8.30–10.00 A. M., 23 Phelps Hall.]

- [4 *Epic Poetry.* 3 hrs.

Introduction to the critical study of Homer. Lectures on the history of Homeric study, Epic poetry, the composition and transmission of the poems, life in the Homeric times in its various aspects; Homeric language and verse. Followed by a familiar but critical interpretation (and exercises in interpretation and criticism) of portions of the *Odyssey*, and of the later Greek epics.]

- [5 *The Greek Orators.* 3 hrs.

A study of Greek Oratory, beginning with the orations of Isaeus, and including some of the private orations of Demosthenes, with reference to Athenian life and law, as well as to the development of Attic eloquence.]

- [6 *Aeschylus.* 3 hrs.

The extant plays of Aeschylus are read. The instructor interprets the *Prometheus* and parts of other plays. The members of the class later interpret in turn.]

Professor GOODELL :—

- [7 *Sophocles.* 3 hrs.

Reading of the seven extant plays with special attention to the artistic form, including style, treatment of the myths, management of the action, use of meters. and the like.]

Professor REYNOLDS :—

- 8 *Aristotle's Poetics. Literary Criticism in Ancient Times.*

1 hr.

Interpretation of the *Poetics* and parts of the *Rhetoric*, with selections from Plutarch, Pseudo-Longinus, and Lucian.

[Tuesday, 10.30 A. M., 23 Phelps Hall.]

Professor GOODELL :—

- 9 *Euripides.* 3 hrs.

Rapid reading of the nineteen plays.

[Monday, Wednesday, and Friday, 10.30 A. M., 23 Phelps Hall.]

Professor REYNOLDS :—

- 10 *Late Greek Poetry.* 1 hr.

This course includes a survey of Alexandrian and later Greek poetry. Reading of the mimes of Herondas, with selections from the Anthology, and from the hymns of Callimachus, and other fugitive poetry.

Professor OERTEL :—

- [11 *Greek Dialect Inscriptions.* 2 hrs.

Greek Dialect Inscriptions will be read chiefly from the grammatical side.]

Dr. HEERMANCE :—

- [12 *Greek Inscriptions.* 2 hrs.

Rapid reading of a considerable number of inscriptions with brief comment. Michel's *Recueil d'inscriptions grecques* (Brussels, 1900) will be used. The members of the course will interpret in turn. No previous knowledge of Greek epigraphy is required.]

Mr. DICKERMAN :—

- 13 *Modern Greek.* 1 hr.

A practical introduction to the subject, using A. Thumb's *Handbuch der neugriechischen Volkssprache* as outline, with some reference to other manuals. Particular attention will be given to the colloquial language.

[Wednesday, 2.00 P. M., 17 Phelps Hall.]

Professor PERRIN :—

- *14 *The Historical Works of Herodotus, Thucydides, and Xenophon.* 2 hrs.

An analysis and characterization of the entire historical works of these authors, with rapid reading of copious illustrative extracts.

[Tuesday and Thursday, 8.30 A. M., 9 Phelps Hall.]

Professor SEYMOUR :—

- *15 *Aeschylus and Pindar.* 2 hrs.

Two plays of Aeschylus and twelve odes of Pindar.

[Tuesday and Thursday, 3.00 P. M., 23 Phelps Hall.]

Professor SEYMOUR :—

- *16 *Greek Testament.* 1 hr.

[Saturday, 10.30 A. M., 17 Phelps Hall.]

Professor REYNOLDS :—

- *17 *Homer.* 2 hrs.

Reading of the entire *Odyssey*. The course is intended for the general student of literature.

[Monday and Friday, 10.30 A. M., 14 Phelps Hall.]

- [*18 *Euripides.* 2 hrs.

A reading-course with reference to Euripides's poetic and dramatic quality. Five or six plays will be read. Discussion of the poet's relation to his own times, style, metres, dramatic innovations, and influence on the Roman and modern dramatists, with occasional lectures.]

- [*19 *Lucian.* 2 hrs.

A general reading-course in prose, with discussion of the life and times of Lucian and of his influence upon modern literature. The *Dream*, *Charon*, *Timon*, *Angler*, and *True History* will be read, with many minor pieces, including the *Dialogues of the Gods* and *Dialogues of the Dead*. The Teubner text will be used together with Williams's *Selections from Lucian*.]

Mr. DICKERMAN :—

- *20 *Greek Composition and Sight Reading.* 2 hrs.

Alternate exercises in composition and in translation at sight of selections from Xenophon. The course is designed especially for those who intend to teach.

[Tuesday and Thursday, 2.00 P. M., 17 Phelps Hall.]

LATIN

LATIN LITERATURE

Professor PECK :—

- 21 *The Epistles of Horace and the Satires of Persius.* 2 hrs.

[Saturday, 9.30-11.30 A. M., 21 Phelps Hall.]

[22 *Lucretius*. 2 hrs.]

Professor MORRIS :—

23 *Plautus*. 2 hrs.

Lectures introductory to the study of Plautus, followed by a critical study of the *Bacchides*. Students should have the complete Teubner text (Goetz-Schoell) or Leo's edition (Berlin, 1895-6).

[Monday and Friday, 3.00 P. M., 13 Phelps Hall.]

Professors MORRIS and OERTEL :—

24 *Private Reading*. 1 hr.

A weekly meeting to direct the private reading of those who take the course.

[Monday, 11.30 A. M., 21 Phelps Hall.]

Assistant Professor INGERSOLL :—

[25 *Latin Comedy*. 2 hrs.

A dozen plays of Plautus, three or four of Terence, and the principal fragments of the other Comic Writers. A course in rapid reading, designed to supplement the critical work on Plautus in other courses.]

Professor PECK :—

*26a *Lucretius and Horace*. 2 hrs.

The Epistles of Horace, including the *Art of Poetry*.

[Tuesday and Thursday, 11.30 A. M., 21 Phelps Hall.]

[*26b *Roman Correspondence*. 2 hrs.

Selected Letters of Cicero, Seneca, Pliny, Fronto, and Marcus Aurelius.]

[*27 *Roman Satire*. 2 hrs.

Readings in Ennius, Lucilius, Horace, Persius, and Juvenal.]

*28 *The Character and Reign of Tiberius*.

Tacitus (*Annals*, i-vi), Suetonius (*Tiberius*) and Velleius Paterculus. The characteristics of "Silver" Latin.

[Tuesday and Thursday, 10.30 A. M., 21 Phelps Hall.]

[*29 *Roman Oratory*. 2 hrs.

Cicero (*Brutus*), Quintilian (*x* and *xii*), and Tacitus (*Dialogus*).]

Professor MORRIS :—

*30 *Vergil.* 2 hrs.

An introduction to Vergil, intended to give students who may expect to teach Latin an acquaintance with the best editions and commentaries and with works on special topics, the life of Vergil, the Aeneas legend, Vergil's relation to Greek poets and to earlier Roman poetry, mythology, Vergil in the Middle Ages. Parts of the text will be carefully interpreted and other parts will be translated and compared with English versions, and there will be practice in metrical reading.

[Monday and Friday, 4.00 P. M., 21 Phelps Hall.]

[*31 *Cicero.* 2 hrs.

An introduction to the orations of Cicero, dealing chiefly with the structure of the speeches and their historical interpretation. and similar in purpose to course *30].

Professors H. P. WRIGHT and INGERSOLL :—

*32 *Latin Satire, Epigram, and Comedy.* 2 hrs.

Selections from Juvenal and Martial, with special reference to a study of the private life of the Romans.

Plautus—three or four plays, with study of literary history, form, and influence.

[Tuesday and Thursday, 9.30 A. M., 11 Phelps Hall.]

*33 *Latin Lyric and Elegiac Poetry.* 2 hrs.

Horace, Catullus, Tibullus, Propertius, Latin Hymns.

Mr. BANCROFT :—

*34 *The Fasti of Ovid.* 2 hrs.

With special reference to Roman religion.

[Monday and Friday, 2.00 P. M., 19 Phelps Hall.]

Assistant Professor INGERSOLL :—

[*35 *Latin Literature.* 2 hrs.

A general survey of the whole field, aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, both as to form and as to subject, and to characterize the several periods of the literature in the light of the changing conditions under which the development took place. Lectures, illustrative readings, and direction of the

student's private reading. The course is designed especially for those who wish to take their bearings in preparation for special work in this department, and for those who, while their chief interest lies in other departments of study, desire to get a general notion of the range and leading characteristics of a literature in which their previous reading has been more or less desultory.]

THE LATIN LANGUAGE

Professor PECK :—

[*36 *Early Latin.* 2 hrs.

Study of inscriptions and of the ante-classical literature, based on Allen's *Remnants of Early Latin*, Merry's *Fragments* and Smith's *Selections*.

The course is largely philological and critical, dealing with the origin of forms, constructions, and literature, and it is especially commended to those who expect to teach Latin.]

Professor OERTEL :—

37 *Latin Grammar.* 2 hrs.

Latin sounds and inflections in the light of comparative grammar and with constant reference to the other Italic dialects. Either Lindsay's *The Latin Language* (Oxford, 1894) or Stolz-Schmalz' *Lateinische Grammatik* (3d ed., 1900, in Iwan v. Müller's *Handbuch der klassischen Altertumswissenschaft*). For those who intend to take a course in Latin syntax the latter is preferable. Collateral reading in Seelmann's *Die Aussprache des Latein* (1885), Bechtel's *Hauptprobleme der Indogermanischen Lautlehre* (1892), Hirt's *Der Indogermanische Akzent* (1895) and *Der Indogermanische Ablaut* (1900), Brugmann's *Grundriss der vergleichenden Grammatik*, Vols. I (2d ed., 1897) and II (1889, 1892) and v. Planta's *Grammatik der Oskisch-umbrischen Dialekte* (1892, 1897) will be necessary. These and other books of reference may be found both in the University and the department libraries. An elementary knowledge of Sanskrit (course *54) and of phonetics (course 60) is very desirable. This course stands in close connection with course 38 and course 59.

38 *The Italic Dialects.* 2 hrs.

After a brief survey of the peoples and languages of ancient Italy, the more important Oscan and Umbrian inscriptions are

read and interpreted. This is followed by a brief systematic exposition of Oscan and Umbrian sounds and inflections. Students should provide themselves either with v. Planta's *Grammatik der Oskisch-umbrischen Dialekte* (2 vols., 1892, 1897) or with Conway's *The Italic Dialects* (2 vols., 1897). Zvetaieff's *Inscriptiones Italiae Inferioris* (1886) gives the text only and lacks the Umbrian inscriptions, which, with a commentary, are separately edited by Bücheler, *Umbrica*, 1883. This course stands in close relation to course 37.

[Wednesday, 9.30-11.30 A. M., 11 Phelps Hall.]

Professor MORRIS :—

[39 *Historical Syntax.* 2 hrs.

Lectures on the history of work in Latin Syntax during the last half-century and on the principles and methods of the historical investigation of the modes and tenses ; discussion of text-books and of a few typical specimens of work in this field ; a partial outline of the syntax of the modes and tenses from the historical point of view.

The lectures will be followed by a study of the *ne* clause, the material for which is collected by the students who take the course.]

Professor OERTEL :—

40 *Practice in Writing Latin Prose.* 2 hrs.

A study of Cicero's *Laelius* from the stylistic point of view. M. Seyffert's edition (2d ed. revised by C. F. W. Müller, Leipzig, 1876) is recommended. Exercises in translation and free composition. Students should provide themselves with H. Menge's *Repetitorium der Lateinischen Syntax und Stylistik* (7th ed., 1900) and his *Kurzgefasste Synonymik* (4th ed.).

Dr. KELLOGG :—

*41 *Latin Composition.* 2 hrs.

An elementary course in writing Latin, connecting the special course of Freshman year with course 40.

[Monday and Friday, 3.00 P. M., 18 Phelps Hall.]

COURSES IN SPECIAL SUBJECTS.

Professor LANG :—

42 *Low Latin.* 1 hr.

The aim of this course is to give an historical account of the popular speech of Rome and of the Roman provinces, and also an outline of its grammar and syntax, as it is disclosed to us by classical Latin, the testimony of the Latin grammarians, inscriptions, mediæval documents, and the consensus of the Romance languages.

The course is taken up with lectures on the history and the grammar of Low Latin and the reading of a Low Latin text. For the present the following is used: J. F. Gamurrini, *S. Silviæ Aquitanæ Peregrinatio ad Loca Sancta*. Editio altera. Romæ, 1888. Students should come provided *at the beginning* with E. Gorra's *Lingue neolatine* (Milano, Hoepli, 1894). Students who wish to take this course must have a good training in Greek and Latin, and at least a reading knowledge of French or Italian.

[Thursday, 8.30 A. M., K, O.]

Assistant Professor INGERSOLL :—

*43 *Roman Law.* 2 hrs.

An elementary and general course, for the classical student or the student of law.

[Monday and Friday, 9.30 P. M., 12 Phelps Hall]

Mr. CLARK :—

*44 *Palaeography.* 2 hrs.

Fac-similes and other material for this course will be found in both the University and the department libraries.

[Monday and Friday, 12.30 P. M., 21 Phelps Hall.]

CLASSICAL ARCHAEOLOGY

Professor PECK :—

*45 *Introduction to Roman Archaeology.* 2 hrs.

This course, dealing with the material development of Rome, will include such subjects as the physical peculiarities of Latium, the situation and topography of Rome, the Forum and imperial

Fora, temples, tombs, arches and other monuments, roads, money, inscriptions.

Special topics will be assigned to the class for investigation and report.

[Wednesday, 9.30–11.30 A. M., 21 Phelps Hall.]

[*46 *Latin Inscriptions.*

Such inscriptions will be studied as illustrate the history of the Latin language and Roman private antiquities.]

Dr. HEERMANCE :—

*47 *Greek Art.—I. Sculpture.* 2 hrs.

Lectures and quizzes by the instructor. Special study of the literary sources by the students. If time permits, an outline of Roman historical sculpture will be given.

[Monday and Friday, 11.30 A. M., 23 Phelps Hall.]

[*48 *Greek Art.—II. The lesser Arts.* 2 hrs.

The course will treat briefly the subjects of Greek painting, ceramics, terra-cottas, bronzes and other metal work, coins, and gems.]

*49 *Greek and Roman Architecture.* 2 hrs.

The various forms of building-construction in Greece and Italy will be examined successively in informal lectures, supplemented by occasional reports from members of the class.

[Tuesday and Thursday, 12.30 P. M., 23 Phelps Hall.]

*50 *Topography and Monuments of Athens.* 2 hrs.

A combination of the historical and strictly topographical methods of treatment will be adopted.

Those who intend to take this course should provide themselves with the Teubner text-edition of Pausanias.

[Tuesday and Thursday, 5.00 P. M., 23 Phelps Hall.]

[*51 *Greek Antiquities.* 1 hr.

Select topics in Greek private antiquities as illustrated by the monuments will be investigated by the members of the class.]

[52 *a. Greek prehistoric Archæology.* 2 hrs. 1st half-year.

A lecture course covering the field with some minuteness.

b. Early Italian and Etruscan Archæology.

2 hrs. 2d half-year.

Similar to the foregoing, but less detailed.]

Mr. DICKERMAN :—

[53 *Greek Epigraphy.* 2 hrs.

a. The local alphabets, and the more important inscriptions written in them.

b. Attic inscriptions, selected for their historical or antiquarian interest.]

INDO-IRANIAN PHILOLOGY

Professor HOPKINS :—

*54 *Elementary Sanskrit.* 2 hrs.

Instruction in Sanskrit, beginning with Whitney's *Sanskrit Grammar*, and passing on to Lanman's *Reader*.

The elementary course in Sanskrit is designed especially for classical students, but it may be taken with profit by students of German or English, especially by those who intend to become teachers, and it is indispensable for those who pursue studies in the comparative grammar of Greek and Latin. The course is continued through the year, the first term being devoted mainly to the grammar, the second to interpretation. By the end of the year the student will have read portions of the classical and Vedic selections in Lanman's reader, and be fitted to pursue the work of the advanced course in the following year. On the other hand, he will have attained such familiar acquaintance with Sanskrit grammatical forms and syntactical structure, as greatly to aid his comprehension of parallel phenomena in other Aryan languages.

[Tuesday and Thursday, 3 P. M.]

55 *Advanced Sanskrit.* 2 hrs.

Selections from the Rig-Veda and Brahmanic texts.

This course is intended for those that have had already at least one year's instruction in Sanskrit. It is addressed particularly to students of literature, social institutions, and religion. The first half of the year will be occupied with reading selections from the Vedic Hymns, which are not only a priceless heirloom of early religious thought, but also a mine of information in regard to early institutions. The special topic of the second term's reading will be the philosophical portions of the first Brahmanic works and Upanishads, the earliest Aryan prose.

[Tuesday and Thursday, 4 P. M.]

[56 *History of Sanskrit Literature.* 2 hrs.

This course consists in a review of Vedic and classical Sanskrit literature from the earliest times to the Puranic period, with extracts to illustrate the various phases of literary development. As it is expected that those who take this course will ordinarily have some knowledge of Sanskrit, the translation is made with reference to these students especially, and they are provided as far as possible with the original texts, as read from day to day. In this way this course forms also a reading-exercise parallel to that in Advanced Sanskrit.]

57 *Avestan Language and Literature.* 1 hr.

Intended for those who desire to begin the study of Zoroaster's scriptures, the so-called Zend-Avesta. Avestan, or Zend, is easy for advanced Sanskrit students, and besides offering much of interest in respect of literature and religion, is also valuable to students of linguistics and syntax.

[Wednesday, 4 P. M.]

COMPARATIVE GRAMMAR, PHONETICS, AND LINGUISTICS

Professor HOPKINS :—

*58 *Introduction to Comparative Syntax.* 1 hr.

This course consists in an analysis of the syntactical facts presented by the Aryan languages, particularly Sanskrit, Greek, Latin, and early German. It is intended especially for students of these languages who desire a more thorough acquaintance with the problems of comparative syntax. To solve these problems a knowledge, if not of the Sanskrit language, at least of Sanskrit syntactical phenomena is necessary, and the lectures are accordingly planned with a view to explain these phenomena to those who have not studied Sanskrit as well as to those who have done so.

[Wednesday, 3 P. M.]

Professor OERTEL :—

59 *Twelve Lectures on Indo-European Phonology.*

These lectures (three times a week during the first four weeks of the first term) are intended to present in rough outlines the most important facts of Indo-European phonology (viz: the vowel-system, strengthening and weakening, ablaut, the gutturals, and accent) and to introduce the student to the more

important literature on these subjects. The lectures are intended for those who are taking courses in the historical grammar of either the classical or modern languages.

60 *Phonetics.*

1 hr.

A general introduction to Phonetics based on a study of the English, French, and German sound-systems. The course is intended to furnish a basis both for the study of the phonology and for the practical teaching of the various languages. Sweet's *Primer of Phonetics* (1890), Vietor's *Elemente der Phonetik* (3d ed., 1898) and Sievers's *Grundsätze der Phonetik* (4th ed., 1893) should be in the hands of the student. Storm's *Englische Philologie* (2d ed., 1896), Bremer's *Deutsche Phonetik* (1893), Laura Soames's *Introduction to Phonetics* (ed. by Vietor, 1900), Passy's *Les Sons du Français* (4th ed., 1897) and Rousselot's *Les Modifications phonétiques* (1891) will be constantly referred to for collateral reading.

The Psychological Laboratory offers to advanced students every facility and all necessary apparatus for the experimental investigation of phonetic problems. See Course I. 8.

61 *Linguistics.*

2 hrs.

An introduction to the scientific study of the life and growth of language. This course, which is general in its nature, is intended for all students, of the classics as well as of the modern languages, who wish to become acquainted with the general principles and chief problems of linguistic science, such as the methods of research, the relation of linguistics to other sciences, the manner and causes of phonetic, semantic, and syntactical changes, the theories concerning the "origin of language," etc. Much stress will be laid on the psychological aspect of linguistic phenomena and the student will be introduced to the more recent literature (bibliography and summaries). Paul's *Principien der Sprachgeschichte* (3d ed., 1899) and Wundt's *Völkerpsychologie*, Erster Band: Die Sprache (2 vols., 1900) will be critically examined. All other books needed for collateral reading will be found in the University and the department libraries.

V. MODERN LANGUAGES AND LITERATURES

THOMAS R. LOUNSBURY, L.H.D., LL.D.	HENRY A. BEERS, M.A.
ALBERT S. COOK, Ph.D., L.H.D.	HENRY R. LANG, Ph.D.
ARTHUR H. PALMER, M.A.	FRED'K M. WARREN, Ph.D.
GUSTAV GRUENER, Ph.D.	CHARLTON M. LEWIS, Ph.D.
ROBERT N. CORWIN, Ph.D.	WILLIAM L. PHELPS, Ph.D.
WILLIAM HENRY BISHOP, B.A.	CHARLES S. BALDWIN, Ph.D.
WILBUR L. CROSS, Ph.D.	ROBERT L. SANDERSON.
GUSTAV A. ANDREEN, Ph.D.	MEYER WOLODARSKY, Ph.D.
CHARLES G. OSGOOD, Ph.D.	KENNETH MCKENZIE, Ph.D.
CLYDE C. GLASCOCK, Ph.D.	RUDOLPH SCHWILL, Ph.D.
JOHN C. ADAMS, B.A.	

As auxiliary to the regular courses in modern languages and literatures, three clubs hold regular sessions throughout the year. These are THE MODERN LANGUAGE CLUB, THE ENGLISH CLUB, and THE GERMAN JOURNAL CLUB. The first two in particular aim to deal with subjects not too technical in character, and thus to promote a sense of comity among all the workers in the same field.

THE MODERN LANGUAGE CLUB, formed of instructors and students in the departments of English, Romance Languages, and German, holds its regular meetings on the second Saturday evening of each month for the reading and discussion of original papers, and for reports of progress in the field of these studies.

THE ENGLISH CLUB, to which are invited all persons, whether members of the University or not, who are interested in the study or teaching of the English language or literature, meets on alternate Monday evenings to listen to the presentation of some topic, and engage in the informal discussion of it. The club never remains in session over an hour, and thus opportunity is afforded for keeping other engagements the same evening.

THE GERMAN JOURNAL CLUB has for its object the presentation of reports on the most interesting periodicals published in German, and devoted to the science of Germanic philology.

THE GERMAN SEMINARY ROOM in Fayerweather Hall, where the Club meets, contains a small working library for the use of advanced students in the Germanic languages. It also serves as a general study and working room for such students.

THE UNIVERSITY LECTURES ON LITERATURE, inaugurated two years ago, were conceived with a view to promoting community of effort among the various philological departments of the University, with especial reference to the broad and illuminative treatment of important literary themes, such as might be welcome to all serious students of literature among us.

THE ENGLISH SEMINARY ROOM, at 135 Elm st., which has lately been enlarged for the better accommodation of graduate students in English, contains the nucleus of a working library. This room is general headquarters for the graduate students in English, and serves for the meetings of the English Club, and for similar purposes.

ROMANCE LANGUAGES

Professor LANG :—

1 *Low Latin.*

See courses in Classical Philology, IV, 42.

FRENCH

2 *Old French.* 2 hrs.

Introduction to the study of Old French language and literature in general, followed by a more especial study of Anglo-Norman. G. Paris' *Extraits de la Chanson de Roland* (6^{me} éd. Paris, 1899), and the same author's *La littérature française au moyen-âge* (Paris, 1888) will be used.

3 *Old French.* (Second year.) 1 hr.

This will be a seminary course, consisting in the investigation of special subjects assigned to the students. Course 3 and course 14 (Provençal, second year) will be conducted together as a seminary course.

Professor WARREN :—

- 4 *The Carolingian Epic.* 2 hrs.

Lectures on the mediæval French poems which relate to Charlemagne and his peers.

- *5 *French Literature of the Eighteenth Century.* 2 hrs.

First, a study of the writers who continue or modify the dramatic traditions inherited from the seventeenth century—Regnard, Marivaux, Voltaire, Diderot, etc.; but the main part of the course is devoted to a study of the evolution of French thought as manifested in the works and the influence of Montesquieu, Voltaire, Diderot, J. J. Rousseau.

[Tuesday and Saturday, 9.30 A. M., E. O.]

- 6 *The Romantic School.* 1 hr.

Lectures and papers on the modern Romantic School of France.

[Tuesday, 11.30 A. M.]

Assistant Professor SANDERSON :—

- [7 *French Literature of the Sixteenth Century.* 2 hrs.

A study of the revival of French letters which followed the Italian Renaissance and the Reformation. The course will begin with a brief survey of the linguistic facts pertaining to that period, and continue with the study of the poets, Marot, Ronsard, etc., and of the prose writers, especially Rabelais and Montaigne.

Omitted in 1901-1902.]

- [8 *French Literature in the Seventeenth Century.* 2 hrs.

A study of the intellectual and social life of France during the seventeenth century. As many of the masterpieces of the great classic writers, Corneille, Racine, Molière, Boileau, Bossuet, La Bruyère, etc., will be read in and out of class, as the time will allow. This course will be conducted in French.

Omitted in 1901-1902.]

- [*9 *French Literature of the Nineteenth Century.* 3 hrs.

Study of representative works, beginning with V. Hugo and the French Romanticists, and reaching as near the present day as time will allow. The reading will be in such order, and accompanied by such comments and lectures, as may give a clear view of French literary thought in the nineteenth century. This

course will be conducted in French, all exercises, written and oral, being intended to impart a command of the language as well as a knowledge of the literature.

Omitted in 1901-1902.]

*10 *Short Masterpieces of French Literature.* 3 hrs.

Rapid reading of short pieces, prose and verse, by great writers from all epochs of modern French literature. Ability to read French prose and verse rapidly is indispensable, as a large amount of reading will be required of students.

[Monday and Friday. 11.30 A. M., E₁ O.]

*11 *General View of French Literature.* 3 hrs.

A survey of French literature from its origin to the present day. As in course 10, a large amount of reading will be required of students. All exercises, written and oral, being intended to impart a command of the language as well as a knowledge of the literature, will be conducted in French.

[Monday, Wednesday, Friday, 8.30 A. M., E₁ O.]

12 *Teacher's Course in French.* 1 hr.

A course for the discussion of topics of interest to teachers of French—questions of syntax, pronunciation, methods of teaching, choice of texts, etc.

PROVENÇAL

Professor LANG :—

13 *Provençal Language and Literature.* 2 hrs.

This course begins with lectures on the historical grammar of old Provençal, after which the origin and growth of Provençal lyric poetry, its style and metre, are studied in connection with the reading of selections from the works of the Troubadours. Students will provide themselves from the beginning with Appel's *Provençalische Chrestomathie* (Leipzig, 1895), and Restori's *Histoire de la littérature provençale* (Montpellier, 1894).

14 *Provençal.* (Second year.) 1 hr.

The second year's course is taken up with the interpretation of Provençal texts by the student, and the study of special subjects, both literary and grammatical, assigned by the instructor. Compare the statement under course 3.

Professor WARREN :—

- 4 *The Carolingian Epic.* 2 hrs.

Lectures on the mediæval French poems which relate to Charlemagne and his peers.

- *5 *French Literature of the Eighteenth Century.* 2 hrs.

First, a study of the writers who continue or modify the dramatic traditions inherited from the seventeenth century—Regnard, Marivaux, Voltaire, Diderot, etc.; but the main part of the course is devoted to a study of the evolution of French thought as manifested in the works and the influence of Montesquieu, Voltaire, Diderot, J. J. Rousseau.

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Omitted in 1901-1902.]

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Study of representative works, beginning with V. Hugo and the French Romanticists, and reaching as near the present day as time will allow. The reading will be in such order, and accompanied by such comments and lectures, as may give a clear view of French literary thought in the nineteenth century. This

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Omitted in 1901-1902.]

*10 *Short Masterpieces of French Literature.* 3 hrs.

Rapid reading of short pieces, prose and verse, by great writers from all epochs of modern French literature. Ability to read French prose and verse rapidly is indispensable, as a large amount of reading will be required of students.

[Monday and Friday, 11.30 A. M., E₁ O.]

*11 *General View of French Literature.* 3 hrs.

A survey of French literature from its origin to the present day. As in course 10, a large amount of reading will be required of students. All exercises, written and oral, being intended to impart a command of the language as well as a knowledge of the literature, will be conducted in French.

[Monday, Wednesday, Friday, 8.30 A. M., E₁ O.]

12 *Teacher's Course in French.* 1 hr.

A course for the discussion of topics of interest to teachers of French—questions of syntax, pronunciation, methods of teaching, choice of texts, etc.

PROVENÇAL

Professor LANG :—

13 *Provençal Language and Literature.* 2 hrs.

This course begins with lectures on the historical grammar of old Provençal, after which the origin and growth of Provençal lyric poetry, its style and metre, are studied in connection with the reading of selections from the works of the Troubadours. Students will provide themselves from the beginning with Appel's *Provençalische Chrestomathie* (Leipzig, 1895), and Res-tori's *Histoire de la littérature provençale* (Montpellier, 1894).

14 *Provençal.* (Second year.) 1 hr.

The second year's course is taken up with the interpretation of Provençal texts by the student, and the study of special subjects, both literary and grammatical, assigned by the instructor. Compare the statement under course 3.

SPANISH

Professor LANG :—

- *15 *Spanish (Elementary Course).* 3 hrs.

In this course, stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge of the language.

Knapp's *Spanish Grammar*, Alarcon's *El Final de Norma* and *El Capitán Veneno* will be used as text-books.

[Monday, Wednesday, Friday, 9.30 A. M., K, O.]

- *16 *Spanish Prose of the Nineteenth Century, and Composition in Spanish.* 2 hrs.

The object of this course is to give the student fluency in reading and practice in writing Spanish. In addition to the reading done in the class-room, a number of texts will be assigned for private study. The following will be among the works to be read : Perez Galdós, *Doña Perfecta* ; Fernan Caballero, *La Gaviota* ; Alarcon, *El Escándalo* ; Valdés, *La Alegría del Capitán Ribot* ; Coloma, *Pequeñeces* ; Juan Valera, *A Vuela Pluma. Artículos literarios y políticos.*—Ford's *Spanish Composition* (Boston, 1899), Ramsey's *Text-Book of Modern Spanish*, and Knapp's *Spanish Grammar* will be used.

[Tuesday and Thursday, 9.30 A. M., K, O.]

- [*17 *Spanish Literature of the Sixteenth and Seventeenth Centuries.* 2 hrs.

This is a literary course, open only to such students as have taken course 5, or who shall satisfy the instructor of their fitness by passing a special examination. Some of the masterpieces of Spanish literature, such as Cervantes' *Don Quixote*, Calderon's *El Principe Constante*, and Lope de Vega's *La Estrella de Sevilla* will be read in class, while others will be assigned for private study. The student's attention will be directed to the relation of Spanish literature in this period to other literatures, especially those of France and England.

Omitted in 1901-1902.]

- 18 *Beginnings of Spanish Literature.* 1 hr.

This course comprises a study of the early literature of Castile previous to the fifteenth century, and its relations with the literatures of France and Italy. Gorra's *Lingua e letteratura spagnuola delle origini* will be used as introduction to the work.

Mr. BISHOP :—

*19 *Spanish*. 2 hrs.

The aim of the instruction in this course is to impart a correct pronunciation, and facility in reading, through the choice of texts of varied range ; to give considerable practice in composition, including letter-writing ; and to make such beginning in conversation as may be a useful basis when the further need and opportunity arise.

Grammar is reduced to the broad essentials, that the greater amount of time may be secured for the other work. In this view some such brief grammar as that of Manning is used, with reference to the fuller work of Ramsay. The reading-matter comprises animated plays, Spanish and Mexican newspapers, the magazine *España Moderna*, such fiction as Pérez Galdós' *Episodios Nacionales*, Jorge Isaac's *Maria*, the stories and sketches of Alarcón, Trueba, Rueda, etc. The philological cast of the language, as compared with the remainder of the group descended from the Latin, is explained. A conspectus is given of the representative periods of the earlier literature, based upon Ticknor, with a fuller account of Pereda, Valdés, Galdós, and Valera, accompanied by readings from their works.

ITALIAN

Dr. McKENZIE :—

20 *Italian (Elementary Course)*. 3 hrs.

This course is open to those who have studied French for at least two years, or who shall otherwise satisfy the instructor of their fitness to take Italian. Stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge.

Grandgent's *Italian Grammar* and *Italian Composition* ; E. de Amici's *Cuore*, Goldoni's *Un Curioso Accidente*, and other texts.

[Tuesday, Thursday, Saturday, 9.30 A. M.]

Professor LANG :—

*21 *Dante's Life and Works*. 2 hrs.

This is a strictly literary course, open only to those who have passed through course 18, or who shall otherwise satisfy the instructor of their fitness to take it. After some introductory lectures on Italian poetry previous to Dante, and its relations to the literature of Provence and of France, the *Vita Nuova*

and selections from the *Divina Commedia* will be read and explained.

Students will provide themselves with Casini's edition of *La Vita Nuova* (2d ediz., Firenze, 1891), Fraticelli's edition of *La Divina Commedia* (Firenze, 1898), and Gardner's *Dante* (Temple Series), 1900.

[Thursday and Saturday, 8.30 A. M., K, O.]

[Dr. McKENZIE :—

*22 *Petrarch and Boccaccio.* 2 hrs.

A study of the Italian writings of Petrarch and Boccaccio, and their influence on the humanistic movement. Rigutini's *Le Rime di Francesco Petrarca* (Milano, Hoepli, 1896); Fornaciari's *Nuove scelte dal Decamerone di G. Boccaccio* (Firenze, Sansoni, 1889).

Omitted in 1901-1902].

[23 *Italian Literature of the Thirteenth Century.* 1 hr.

Reading of texts, with reference both to their literary qualities and to the history of the language. Particular attention will be paid to the early lyric poetry of Italy and its relation to the poetry of Provence.

Monaci's *Crestomazia italiana dei primi secoli* (Città di Castello, Lapi, 1889 and 1897); Casini, *Forme metriche italiane* (Firenze, 1890).

Omitted in 1901-1902].

24 *Fable-literature in the Middle Ages.* 1 hr.

Study of the history of Æsopic fables from ancient times to the present, with special reference to the mediæval French and Italian collections; the relation between the fables and the beast-epic. Lectures, reading, reports on assigned topics. The reading will include the *Fables* of Marie de France (Warnke's edition, Halle, 1898).

RUSSIAN

Dr. WOŁODARSKY :—

25 *Elementary Russian.*

The first term will be given to the study of the elements of the language in connection with the reading of Turgenev's *The Virgin Soil*. The second term will be given to the study of syntax in connection with the reading of short stories by modern writers

[Saturday, 8.30-10.20 A. M.]

26 *Advanced Russian.*

A general course in Russian Literature in connection with the reading of a historical chrestomathy and with sight-reading in Turgenev's *On the Eve*, and in Tolstoi's *Master and Man*.

[Hours to be determined.]

COMPARATIVE LITERATURE

Dr. SCHWILL :—

27 *Comparative Literature.* 2 hrs.

The drama; a study in principles of dramaturgy. The development of the drama as a literary and histrionic art among the various nations. Dramas, both ancient and modern, will be examined and compared. Special stress is laid on the drama of the Renaissance. Reports and discussion of assigned reading. A reading knowledge of French and German is required.

GERMANIC LANGUAGES

GERMAN

Professor PALMER :—

28 *Introduction to Germanic Philology.* 2 hrs.

A course introductory to the general study of Germanic philology, dealing with its history, methods, fields, and fundamental facts. The basis of the work is Paul's *Grundriss der Germanischen Philologie*, of which portions are read, discussed, and supplemented by informal lectures.

29 *Gothic.* 2 hrs.

An introductory course, especially for those who intend to study German or English historically, in the study of Gothic and its phonological relations to both earlier Indo-Germanic and to later Germanic languages. Braune's *Gotische Grammatik* or Streitberg's *Gotisches Elementarbuch*, Heyne's *Ulfilas*, Streitberg's *Urgermanische Grammatik*, and Henry's *Comparative Grammar of English and German*.

*30 *Goethe, Works and Life.* 3 hrs.

Together with outline study of Goethe's life and development in connection with his lyric poems, his early prose writings, and his principal dramas, particular attention will be given to Faust I and II, Goethe's later prose works, and his important utterances in letters, journals, and conversations.

[Tuesday, Thursday, Saturday, 8.30 A. M.]

- *31 *History of German Literature, 1624-1832.* 2 hrs.

The development of German literature will be studied from the time of Opitz to Goethe's death. The text-books will be : Kluge's *Geschichte der Deutschen National-Litteratur*, Scherer's *History of German Literature*, Max Müller's *German Classics*, and Hillebrand's *German Thought from the Seven Years' War to Goethe's Death*.

[Tuesday and Thursday, 9.30 A. M.]

Professor GRUENER :—

- [32 *Middle High German.* 3 hrs.

Hartmann: *Der Arme Heinrich* and *Iwein*. *Nibelungenlied*. Selected poems of Walther von der Vogelweide. Selections from Wolfram von Eschenbach's *Parzival*. Lectures and papers.

Omitted in 1901-1902.]

- 33 *German Literature of the Reformation Period (1500-1624).* 3 hrs.

The development of German literature is studied from the beginning of the Reformation to the time of Opitz. Characteristic works of the important writers of the period are read, chiefly for literary purposes, though also with reference to the political, social, and religious conditions of the times.

- *34 *Schiller, Works and Life.* 2 hrs.

Rapid reading of plays, poems, and prose writings of Schiller, with study of his life. The object of this course is to acquaint the student more fully with the vocabulary and style of standard German literature, and to present Schiller's character and influence as a writer and thinker.

[Tuesday and Thursday, 10.30 A. M.]

Professor CORWIN :—

- 35 *Old High German.* 3 hrs.

A rather detailed course in the oldest High German dialects and literature. Braune's *Althochdeutsche Grammatik* and *Althochdeutsches Lesebuch*, and the collateral literature for reference.

- [36 *History of New High German.* 3 hrs.

The earlier periods of the language will first be surveyed, for the purpose of gaining a comprehensive idea of the chief lin.

guistic phenomena and their causes. Upon this basis a more special study will be made of the origin and development of New High German.

Omitted in 1901-1902.]

Dr. ANDREEN :—

- 37 *Germanic Mythology.* 2 hrs.

A course of studies in the mythology of the Germanic race, based on the earliest Scandinavian, German, and English literatures, and on collateral sources.

Dr. GLASCOCK :—

- 38 '*Storm and Stress*' in German Literature. 1 hr.

The period in German literature known as *Sturm und Drang*, its origin, and its relation to early Romanticism will be studied. A course of lectures will be given, and selections will be read from Klinger, Leisewitz, Wagner, Lenz, Maler Müller, Schubart, and, perhaps, Goethe and Schiller. The text-books will be: *Stürmer und Dränger*, *Deutsche National-literatur*, hrsg. von J. Kürschner, Bände 79-81, Stuttgart.

SCANDINAVIAN

Dr. ANDREEN :—

- [39 *Old Norse (Icelandic).* 3 hrs.

Grammar, and reading in the Sagas and the Elder Edda.

Omitted in 1901-1902.]

- [40 *Norwegian and Danish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

Omitted in 1901-1902.]

- 41 *History of Modern Norwegian Literature.* 2 hrs.

This course is based on Jaeger's *Den Norske Literaturs Historie*. Leading works of Björnson and Ibsen are the subject of special study. This course is open only to those who already have a good reading knowledge of Norwegian.

- 42 *Swedish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

- [43 *History of Swedish Literature to 1718.* 2 hrs.

The development of Swedish literature is traced in connection with Schück's *Svensk Litteraturhistoria*, and selections from the works of the leading authors are studied. This course is intended only for those who already have a good reading knowledge of Swedish.

Omitted in 1901-1902.]

ENGLISH.

Professor LOUNSBURY :—

- 44 *The Early Victorian Era: Tennyson and his Contemporaries.* 2 hrs.

Professor BEERS :—

- *45 *Milton and his Contemporaries.* 2 hrs.

The subject will be treated with special reference to the political and religious conflict of the times. All of Milton's English verse will be read, a few of his Latin poems, and much of his prose. The work of the Church poets and Cavaliers will be examined, as also various diaries and memoirs, and portions of the writings of Fuller, Clarendon, Butler, etc.

- *46 *The Modern Drama.* 2 hrs.

An historical review of the *acted* literary drama from 1660 to the present day, with incidental reading of foreign plays that have influenced the English theatre.

Professor COOK :—

The strictly graduate courses offered below are given according to circumstances and the needs of the graduate

students actually in attendance; and special attention is given to the supervision of individual research in any part of the general field.

47 *Encyclopædia and Methodology of English.* 2 hrs.

This course is designed to acquaint the student with philological principles in general, with the more important branches of scholarship relative to the English language and literature, with a few of the representative books in each of these branches, and with the scope and method of research in this department.

[Wednesday, 4.00 P. M., 135 Elm st.]

48 *Theories of Poetry.* 2 hrs.

A course in the theories of poetry in general, and in the principles of criticism applicable to its various departments, as the epic, dramatic, and lyric. Discussions and papers on the basis of standard works, such as Aristotle's *Poetics*, Sidney's *Defense of Poesy*, Woodbridge's *The Drama*, Boileau's *Art of Poetry*, Lessing's *Laokoon*, and others of similar character. Reading of masterpieces to illustrate and extend the principles derived from theoretic works.

[Wednesday, 3.00 P. M., 135 Elm st.]

49 *Dante in English.* 2 hrs.

A course primarily in the *Divina Commedia* and the *Vita Nuova*. Two or three of the best English translations are employed, together with such reference books as may be necessary. Much attention is bestowed upon the historical and literary background of the poet and his works.

[Tuesday, 3.00 P. M., 135 Elm st.]

50 *Advanced Old English.* 2 hrs.

A survey of the subject for those who are not yet prepared for minuter specialization. The course this year began with the study of Cook's edition of Cynewulf's *Christ*.

[Thursday, 11.30 A. M., 135 Elm st.]

51 *Seminary in English Literature.* 3 hrs.

A critical study of some representative writer or department of literature. In 1894-95, Ben Jonson was selected; in 1895-96, Browning; in 1896-97, Chaucer; in 1897-98, the Jacobean Drama; in 1898-99, Spenser; in 1899-1900, Chaucer; in 1900-1901, Chaucer.

[Alternate Mondays, 7.00 P. M., 135 Elm st.]

52 *Historical English Prosody.*

Schipper's *Englische Metrik* is adopted as the basis of study, but reference is made to other authorities.

[Thursday, 11.30 A. M., 135 Elm st.]

53 *Old and Middle English.*

2 hrs.

An elementary course in the beginnings and earlier development of the English language and literature. Reading is begun at the earliest practicable moment, and the study is made as literary in character as is consistent with a thorough grounding in the rudiments of the language. This course, while it is indispensable to all graduate students and future teachers of English, and will also be of service to students of English history and of the English Bible, is designed as well for those who, in the pursuit of general culture, are unwilling to remain ignorant of the foundations of the English language and literature.

[Tuesday and Thursday, 10.30 A. M., C₁ O.]

Professor LEWIS :—

54 *Verse Composition.*

1 hr.

After a few introductory lectures on the principles of English versification, the student will begin weekly or fortnightly practice in composition, with regular appointments for consultation and criticism. The purpose of this course is partly to familiarize the student with the chief varieties of English verse and stanza (such as blank verse, heroic verse, the sonnet, etc.), and partly to give him the added command of language that results from practice in difficult forms.

[Thursday, 9.30 A. M.]

[55 *Shakspeare.*

2 hrs.

A minute study of three or four of the greater plays. Critical examination of the text, and of the work of the leading commentators, and investigation of dates and sources.

Omitted in 1901-1902.]

Professor PHELPS :—

*56 *Chaucer.*

2 hrs.

A literary study of Chaucer. Most of the *Canterbury Tales*, the minor poems, and the *Troilus and Criseyde*, will be read in the classroom. Chaucer as a poet, metrist, humorist, literary artist, and delineator of character.

In connection with the *Knight's Tale* and the *Troilus*, the Elizabethan plays, *The Two Noble Kinsmen* and *Troilus and Cressida*, will be read. The types of character and the social life of Chaucer's times will be discussed in connection with the *Canterbury Tales*. His place in English literature, his influence on English poetry, and the modernized versions by Dryden and others, will receive due attention.

[Wednesday and Friday, 10.30 A. M.]

[57] *Elizabethan Literature.* 2 hrs.

Studies in the poetry and prose of the Elizabethan period, exclusive of the drama. Wyatt, Surrey, Ascham, Foxe, Painter, Lyly, Raleigh, Greene, Nash, Lodge, Marlowe, Hooker, Sidney, Spenser, Shakspeare, Davies, Drayton, Chapman, and others. Lectures, discussions, and preparation of special papers by members of the class.

Omitted in 1901-1902.]

[58] *English Literature of the Seventeenth Century.* 2 hrs.

A rather minute study of English poetry and prose from Donne to Dryden. The poetry of Donne, Drummond, Herbert, Crashaw, Vaughan, Quarles, Carew, Suckling, Herrick, Cowley, Milton, Waller, Marvell, Butler, and Dryden is read; also the prose of Burton, Browne, Taylor, Pepys, Fuller, Walton, Clarendon, Milton, Bunyan, and Dryden. The social life of the times is discussed.

Omitted in 1901-1902.]

*59 *Tennyson and Browning.* 2 hrs.

The autumn term will be occupied with the study of Tennyson. Practically all of his poetry will be read. His theory of the poet's art, his skill in technique, his artistic expression, and his representation of nineteenth century ideas, will be studied in detail.

After Christmas, the complete works of Browning will be taken up, only those being omitted which are unnecessary in forming a general estimate of his work as a poet. His personal force, his growth, his attitude toward his art, and his place in nineteenth century poetry will be considered; but the chief attention will be paid to his analysis of human life and character.

The instruction in this course will be by means of recitations, discussions, and the preparation of short special papers by the students.

[Wednesday and Friday, 8.30 A. M.]

Assistant Professor CROSS :—

60 *Types of Prose Fiction.* 1 hr.

The aim of this course is to present in outline the development of the English novel. About thirty prose fictions, English and Continental, will be taken up in their logical order, and discussed in their relation to one another and the fiction of their time. The instruction is mainly by lecture.

[Thursday, 2 P. M., 20 South Sheffield Hall.]

Dr. OSGOOD :—

61 *Advanced Middle English.* 1 hr.

A general survey of the subject. The earlier part of the work will be based upon a chrestomathy, and followed by the use of various editions of single texts. A study of Middle English phonology and dialects, and of the different literary forms employed in the Middle English period, with reference to origins and influences both at home and abroad.

[Monday, 9.30 A. M., 135 Elm st.]

Mr. J. C. ADAMS :—

*62 *English Literary Criticism.* 2 hrs.

An historical survey of literary criticism in England since the middle of the sixteenth century. The course aims to define and illustrate the varying ideals that have successively prevailed in critical theory and practice from Ascham to Pater. Among the authors to be read are Ascham, Sidney, Puttenham, Jonson, Rymer, Dryden, Pope, Addison, the Warton, Johnson, Jeffrey, Wordsworth, Coleridge, Hazlitt, Lamb, Arnold, and Pater. Lectures, reports, and discussion of the assigned readings; individual investigation by members of the class.

Assistant Professor BALDWIN :—

*63 *Rhetoric (six essays in criticism).* 1 hr.

Studies of nineteenth century English critics; essays in any field of criticism; regular consultations.

VI. NATURAL AND PHYSICAL SCIENCE

WILLIAM H. BREWER, Ph.D.	ARTHUR W. WRIGHT, Ph.D.
SIDNEY I. SMITH, M.A.	ADDISON E. VERRILL, M.A.
HENRY S. WILLIAMS, Ph.D.	WILLIAM G. MIXTER, M.A.
CHARLES S. HASTINGS, Ph.D.	EDWARD S. DANA, Ph.D.
RUSSELL H. CHITTENDEN, Ph.D.	FRANK A. GOOCH, Ph.D.
HORACE L. WELLS, M.A.	LOUIS V. PIRSSON, Ph.B.
CHARLES E. BEECHER, Ph.D.	SAMUEL L. PENFIELD, M.A.
HENRY S. GRAVES, M.A.	HARRY B. FERRIS, M.D.
PHILIP E. BROWNING, Ph.D.	ALEXANDER W. EVANS, M.D., Ph.D.
HENRY L. WHEELER, Ph.D.	LAFAYETTE B. MENDEL, Ph.D.
HERBERT E. GREGORY, Ph.D.	JAMES W. TOUMEY, M.S.
HARRY W. FOOTE, Ph.D.	EDWARD A. BOWERS, B.A.
WESLEY R. COZ, Ph.D.	WILLIAM J. COMSTOCK, Ph.B.
ISAAC K. PHELPS, Ph.D.	JAMES LOCKE, Ph.D.

A brief outline of the facilities for carrying on researches and experiments in Mineralogy, Geology, Petrology, Paleontology, and Zoology is given on pp. 118-122 under the title of the Peabody Museum of Natural History.

The work in PHYSICS is carried on in the Sloane Physical Laboratory, and the Physical Laboratory of the Sheffield Scientific School in Winchester Hall.

The work in CHEMISTRY in the Sheffield Chemical Laboratory, and in the Kent Chemical Laboratory.

The work in PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY in the Sheffield Biological Laboratory.

The work in COMPARATIVE ANATOMY and GENERAL BIOLOGY in the Sheffield Biological Laboratory.

The work in BOTANY in the Eaton Herbarium, Sheffield Hall.

The work in FORESTRY in the Forest School.

THE GEOLOGICAL CLUB is an association of the instructors and graduate students, for the purpose of encouraging the students to prepare papers, and aid in the discussion of current topics of interest in geological subjects.

THE PHYSICS JOURNAL CLUB, open to graduate students in Physics, meets weekly for the review and discussion of the current literature in this department of study.

THE PHYSICAL CLUB, organized for study, criticism and discussion, holds fortnightly meetings. Open to graduate and advanced students in Physics.

THE KENT LABORATORY JOURNAL CLUB meets fortnightly for the review and discussion of current chemical literature.

THE CHEMICAL CLUB, composed of instructors, graduate students, and others interested in chemistry, holds fortnightly meetings for the presentation and discussion of papers and reviews of recent work.

THE BIOLOGICAL CLUB, composed of instructors, graduate students, and others instructed in Biology, meets fortnightly for the presentation and discussion of papers and reviews of recent work.

MINERALOGY

Professor PENFIELD :—

1 *Determinative Mineralogy.* 3 hrs.

This course consists at first of a few exercises in blowpipe analysis, which are then followed by an application of these methods to the determination of minerals. Students have abundant opportunity to experiment with minerals, and thus become familiar with their chemical and physical properties. A labeled collection of carefully selected specimens for comparison, and unlabeled collections for identification, are at all times accessible. The laboratory is open daily from 9-1 and (Saturdays excepted) from 2.30-5, so that by devoting more than the allotted time to the subject the course may be considerably extended.

[Wednesday, 2.30-5.30 P. M., or Saturday, 9.15 A. M.-12 M.]

2 *Crystallography.* 2 hrs. 1st half of 2d term.

Lectures in which the symmetry relations of the various systems, and the forms of crystals and their physical properties are discussed. Throughout this course collections of natural crystals and wooden and glass models are used for demonstrating varieties of form and development.

[Monday and Tuesday, 3.00-4.00 P. M.]

3a *Descriptive Mineralogy.* 3 hrs. 2d half of 2d term.

Lectures on the general subject of mineralogy, in which the classification, physical and chemical properties, occurrences, associations, and uses of minerals are discussed. The course is illustrated by the valuable and extensive Brush Collection.

[Monday and Tuesday, 3.00–4.00 P. M., and Saturday, 9.15–10.15 A. M.]

3b *Descriptive Mineralogy (Advanced Course).*

1 hr. 1st and 2d terms.

This course is open to those who have had courses 2 and 3a. Specimens in the Brush Collection are examined, and special prominence is given to the discussion of the economic and geological relations of minerals.

4 *Experimental Work in Crystallography and Mineralogy.*

Daily.

The reflecting goniometer is used, the mathematical relations of crystal forms are carefully determined and calculated, and the forms are drawn. The optical properties of crystals are studied and determined by means of the polariscope, polarizing microscope, refractometer, total reflectometer, and other appliances.

5 *Original Investigation in Mineralogy and Crystallography.*

Opportunities are offered to those who are far enough advanced, for research work in mineralogy and crystallography. This includes the study of the chemical composition and deduction of the formulae of minerals, together with the determination of their physical, optical, and crystallographic properties.

Material for investigation is available from the University and Brush Collections.

GEOLOGY

Professor WILLIAMS :—

6 *Historical Geology.* 4 hrs. to count as 2 hrs.

Special study of geological formations and faunas, with reading of geological literature, laboratory practice and preparation of scientific papers. The collections and library of the local laboratory of the United States Geological Survey and the collections of the Peabody Museum will be available for study by members of this class.

7 *Evolution Theories.* 2 hrs.

The detailed study and discussion of standard theories of evolution, such as Darwin's *Origin of Species*, Cope's *Primary Factors of Evolution*, etc.

[Tuesday and Thursday, 9.30 A. M., Geological Laboratory.]

8 *Geological Surveys.*

A course of lectures, with readings, in exposition of the results of experience already attained by geologists; and treating of the work, organization and methods of geological surveys, with special reference to the problems of stratigraphic geology. The course will cover the discussion of the following subjects: viz., the methods of observing and recording geological facts; the determination, correlation and classification of geological formations, and the investigation of fossil faunas.

9 *Practical Geology.*

Original investigations. The selection and assignment of some specific geologic problem for research, the location and nature of which will be determined in each case upon consultation. The problems selected will form the basis for the thesis to be offered for the Doctorate degree.

Dr. GREGORY :—

10 *Physiography.* 3 hrs.

A general study of the origin, development and classification of land forms, followed by a detailed field and laboratory study of some selected area.

PETROLOGY

Professor PIRSSON :—

10 *Petrology.* Daily, 9 A. M. to 1 P. M.

(a) Study and determination of the rock-making minerals by optical and chemical methods. Includes the use of the petrological microscope.

(b) History, origin, and classification of rocks, commencing with igneous types and passing into the crystalline schists, during which metasomatic and dynamic changes, including effects of dynamo-metamorphism, are taken up. The work is carried on mostly in the laboratory, with access to collections both of rocks and thin sections.

(c) Original investigation. In sequence to (a) and (b) some special object or locality may be made the subject of investiga-

tion. The work requires laboratory methods of determination, both chemical and microscopical, with consultation of the literature and occasionally work in the field. A large amount of material is available in the petrologic collections of the Sheffield Scientific School.

Only those whose previous training in mineralogy and geology has been sufficient to enable them to pursue the subject advantageously are admitted to this course.

11 *Elementary Petrology.* 1 hr. 1st half 2d term.

A series of lectures of an elementary nature, and without the use of the microscope, on the history, origin, and classification of rocks with especial reference to their geologic relations and economic properties. Illustrated by collections.

[Hour to be arranged.]

*12 *Elementary Structural and Dynamical Geology.* 3 hrs. 1st half-year.

This course in Geology is given partly by lectures and partly by recitations with the use of a text-book. It includes the elements of Structural and Dynamical Geology and these subjects are illustrated by maps, diagrams, photographs and specimens. The course is especially designed as an introduction to more extended geological studies and may be followed advantageously by course *19.

PALEONTOLOGY

Professor BEECHER :—

13 *General Invertebrate Paleontology.* 2 hrs. 1st term.

An elementary course, including the careful study in the laboratory of characteristic genera representing the principal orders of fossil invertebrates.

14 *Invertebrate Paleontology (Faunal).*

The study of extinct faunas by means of collections of fossils from typical localities.

15 *Invertebrate Paleontology (Special).*

Systematic study of the structure, development, and affinities of one or more classes of fossil animals. In the laboratory work, attention is given to modern methods of preparation and preservation of specimens.

16 *Original Investigation in Invertebrate Paleontology.*

Following 15, 16, 17, opportunity is given to take up some special subject for investigation and the discovery of facts new to science.

The requisite material is available in the extensive collections of the Peabody Museum.

The work in these courses (15-18) necessitates the frequent consultation of memoirs and scientific reports, occasional field-work, the use of the microscope, the preparation of thin sections, and other methods employed in thorough investigations.

17 *Organic Evolution.* 1st half-year.

Practical illustration of the methods used in modern researches.

18 *Taxology.* 1st half 2d term.

The principles governing the classification of organisms.

Courses 15-20 are open to those who have had some previous knowledge of geology and zoology. Course 15 : laboratory work 4 hours per week. Courses 16, 17 : laboratory work three days per week, 2.00-5.00 P. M. Courses 19 and 20 will require about two hours lecture and two hours in the laboratory each week. Other hours and divisions of work may be arranged to suit the convenience of students.

*19 *Historical Geology.* 3 hrs. 2d half-term.

The sequence and distribution of the sedimentary formations are studied, together with the introduction and succession of the various types of life during past geological ages. Suitable collections of fossils are used to illustrate the subject. This course should follow VI, *12.

PHYSICS

Professor A. W. WRIGHT :—

20 *Physics.* 4 hrs. to count as 2 hrs.

Chiefly practical work in the Sloane Physical Laboratory, with measurements, especially in heat, light, electricity, and magnetism, each exercise occupying two hours. As introductory to the laboratory practice, the exercises during a portion of the first term consist of recitations or discussions upon the theory and methods of physical measurements, the use of instruments,

and other special topics. Laboratory facilities are also freely accorded to students of the course at other times than those of the stated exercises.

[Monday and Friday, 9.30–11.20 A. M., Sloane Laboratory.]

21 *Physics (Advanced Course).* 4 hrs. to count as 2 hrs.

Practical work in the Sloane Physical Laboratory, with instruction in the principles and methods of physical investigation, the processes and instruments of measurement, and the methods of computing and reducing results of observations. Special attention is paid to practical measurements in optics, electricity, and magnetism. The student is expected to make original investigations an important part of his work, and has the free use of the laboratory facilities for carrying them on.

For those who have already pursued course 20 or its equivalent.

[Wednesday, 10.30–12.30, and Thursday, 11.30, Sloane Laboratory.]

Professor HASTINGS :—

22 *Physics.* 3 hrs. lectures, 6 hrs. laboratory work.

Laboratory work, supplemented by lectures on the theory of observation with the method of least squares, and on the theory of electricity and electrical instruments. The use of the laboratory is at the command of the student at all times.

[Lectures on Monday, Wednesday, and Friday, 12.00 M.]

For courses in Mathematical Physics, see VII.

CHEMISTRY

(COURSES IN THE SHEFFIELD CHEMICAL LABORATORY)

The analytical laboratories of the Sheffield Scientific School are open to students in term time from 9 to 1 and from 2 to 5 o'clock, every week-day except Saturday. The greater part of the instruction is given in the laboratory to each student separately, but the various classes have, in addition, two or more lectures or recitations a week, in connection with the studies pursued in the laboratory.

Professor MIXTER :—

23 *Chemical Physics.*

Especially the methods employed in the determination of molecular masses and specific heat.

Professor WELLS :—

24 *Qualitative Analysis.*

1st term.

Embraces a study of the commonly occurring elements in their qualitative relations, and includes a systematic course of analysis for the same. A good knowledge of elementary chemistry is a necessary preparation for this. If desired the course is extended to include a study of many of the rare elements.

[Laboratory hours: Monday to Friday, 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M. Lectures and recitations: Monday and Tuesday, 5.00 P. M.,—occasionally at 12.00 M.]

25 *Quantitative Analysis.*

This is open only to those who have taken course 24 or its equivalent.

(a) *Gravimetric Analysis.* Second term. Embraces a series of exercises involving a considerable number of important methods.

(b) *Volumetric Analysis.* First term. This follows the gravimetric analysis. It includes the most important and typical methods.

(c) *Ultimate Organic Analysis.* First term.

26 *Inorganic Preparations.*

1st half of 2d term.

A course of laboratory work, with lectures or recitations. About thirty or forty compounds are prepared, which give a variety of important and instructive processes.

27 *Advanced Quantitative Analysis.*

(a) *Metallurgical Chemistry.* The analysis of ores, fuels, fluxes, alloys, metals, and other furnace products.

(b) *Mineralogical Chemistry.* The analysis of minerals for scientific purposes.

Laboratory hours, every week-day (except Saturday) 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M.

28 *Metallurgy and Assaying.*

2d half of 2d term.

A course of lectures on elementary metallurgy, followed by a short course of demonstrative lectures on gold and silver assaying, with the practical application of assaying to a few typical ores.

29 *Technical Gas-Analysis.*

2d half of 2d term.

A short practical course, including the principal methods.

30 *Investigations in Inorganic Chemistry.*

Opportunities are offered, to those who have had sufficient preparation, to make researches upon analytical methods, the preparation of chemical compounds, and other scientific problems.

Mr. COMSTOCK :—

31a *Elementary Organic Chemistry.* Both terms.

During the first four weeks of the second term the afternoon exercises are omitted and daily laboratory work substituted, 9.00 A. M. to 1.00 P. M., with occasional lectures at 12.00 M.

[Recitations supplemented by lectures, Thursday and Friday, 5 P. M.]

31b *Organic Chemistry.* 2 hrs. 1st term.

A continuation of the above course. Recitations and lectures, [Thursday and Friday, 5.00 P. M.]

Dr. LOCKE :—

32a *The Systematization of Inorganic Compounds.* 1st term.

*32b *Advanced Inorganic Chemistry.* 3 hrs. 1st term.

[See Chemistry, page 93.]

33 *The Application of the Ionic Theory to Analytical Chemistry.* 2 hrs. 1st half 2d term.

Ostwald's *Foundations of Analytical Chemistry* will be followed.

34 *The Constitution of Chemical Compounds.* 2 hrs. 2d half 2d term.

Methods of determination illustrated on typical compounds; stereochemistry; double compounds, etc.

Assistant Professor H. L. WHEELER :—

35 *Advanced Organic Chemistry.*

This offers an opportunity for more extended study and original investigation to those who have proper preparation.

36 *Organic Preparations.* 2d half of 2d term.

Laboratory work, consisting of five exercises per week of about three hours each, in the preparation of such compounds as will give familiarity with the most important synthetical methods.

Dr. FOOTE :—

37 *Physical and Electro Chemistry.* 2d term.

A course of lectures on the theory of Physical and Electro Chemistry, one hour weekly.

[Monday, 5.00 P. M.]

38 *Physico-Chemical Measurements.* 2d term.

Laboratory practice in the more important methods of Physical Chemistry.

[Monday to Friday, inclusive, 9.30 A. M. to 1.00 P. M.]

40 *Electrochemistry.* 2d term.

Experimental work in Electrochemistry, including the usual measurements, quantitative electro-analysis, and the synthesis of organic and inorganic compounds.

[Monday to Friday, inclusive, 9.30 A. M. to 1.00 P. M.]

(COURSES IN THE KENT LABORATORY)

The Kent Laboratory is open daily from 9.00 A. M. to 1.00 P. M., and from 2.00 to 5.00 P. M., to students who take strictly graduate courses.

Professor GOOCH, Assistant Professor BROWNING, and
Dr. I. K. PHELPS :—

*41 *Inorganic Chemistry—Experimental and Descriptive.*

3 exercises—6 hrs.

Lectures, laboratory work, and class-room exercises. An introduction to elementary chemical theory, the use of symbols and equations, and the study of the elements and their compounds.

[Monday and Friday, 11.30 A. M.—1.20 P. M., Tuesday,
3-4.50 P. M.]

Assistant Professor BROWNING :—

*42 *Qualitative Analysis.* 3 exercises—5 hrs.

Laboratory practice in the ordinary processes of qualitative analysis, with lectures.

[Monday and Friday, 8 30-10.20, Wednesday, 8.30-9.20 A. M.]

Professor GOOCH and Dr. I. K. PHELPS :—

*43 *Organic Chemistry.* 2 exercises—4 hrs.

An introduction to the study of the compounds of carbon. Lectures with laboratory work. Open to those who have completed course 41, or its equivalent.

[Monday, 10.30-11.20, and Wednesday, 9.30-12.20 A. M.]

Professor GOOCH :—

- *44 *Quantitative Analysis.* 2 exercises—6 hrs.
Lectures with laboratory practice in the use of the simpler methods of gravimetric and volumetric quantitative analysis.
[Wednesday and Friday, 2.00–4.50 P. M.]
- 45 *Quantitative Analysis (second course).*
Practice in the more complex processes of gravimetric, volumetric, and electrolytic analysis.
[Hours for consultation fixed by appointment.]
- 46 *Chemical Theory.* 1 hr.
This course is devoted to the discussion of the general principles and modern theories of chemistry.
[Monday, 4 P. M.]
- 47 *Special Methods.*
Laboratory practice in special methods of analysis and research.
[Hours for consultation fixed by appointment.]
- 48 *Original Work and Research in Inorganic Chemistry.*
(a) Special problems of *analysis*—either experimental criticism of known processes or constructive work looking towards the development of new methods.
(b) The critical examination of reactions.
[Hours for consultation fixed by appointment.]

Assistant Professor BROWNING :—

- 49 *The Rare Elements.* 1 hr.
A short course of lectures covering the discovery, occurrence, and principal reactions of the elements not included in the general course. The methods in use for the qualitative and quantitative determination of these elements are carefully studied, and a systematic arrangement developed so far as practicable. Those who wish to do so may take laboratory work in connection with these lectures under course 50.
[Tuesday, 8.30 A. M.]
- 50 *Inorganic Preparations.* 2 hrs.
A short course, mainly laboratory work, covering typical methods for the preparation of inorganic salts.
[Hours for consultation fixed by appointment.]

Dr. I. K. PHELPS :—

51 *The Carbon Compounds—Descriptive and Theoretical.*

2 hrs.

A course of lectures treating systematically the more important compounds of carbon and the theories concerning them. An elementary knowledge of organic chemistry is desirable as a preparation.

[Tuesday and Thursday, 9.30 A. M.]

52 *Organic Synthesis.*

Laboratory practice in synthetical processes too long or too complicated to be included in the experimental work of course 43.

[Hours for consultation fixed by appointment.]

BIOLOGY

Professor VERRILL :—

53 *Zoology.*

Laboratory practice, recitations, readings, and lectures. The laboratory work is varied according to circumstances, in order to accommodate, as far as possible, those students who wish to pursue special branches. Most of the time is devoted to comparative anatomy, morphology, histology, and systematic zoology. Ample collections in the Peabody Museum, representing all classes of animals, are available for instruction, while the proximity to the sea makes it easy to provide fresh or living examples of most classes of marine animals for study and dissection.

Professor S. I. SMITH and Dr. COE :—

*54 *Elementary Anatomy and Histology.* 4 hrs. 1st term.

*55 *Comparative Anatomy and General Biology.* 6 hrs. 2d term.

56 *Comparative Anatomy and General Biology.*

Graduate students who have had sufficient elementary training are received in the Sheffield Biological Laboratory, and are provided with special advanced courses of instruction adapted as far as possible to the particular wants of the individual student. Such courses may cover either or both terms, and require at least three hours of laboratory work per day for two or more days each week. To such students the laboratory is open five days a week.

Professor FERRIS:—

57 *Comparative Morphology of the Vertebrate Brain.* 1 hr.

A course extending through the entire year, consisting principally of dissections and drawings, with some demonstrations and lectures, on the embryology and general morphology of the brain.

Professor CHITTENDEN and Assistant Professor MENDEL:—

58 *Physiological Chemistry.*

Graduate students who have sufficient knowledge of analytical and organic chemistry and elementary physiology are received in the Sheffield Biological Laboratory at the beginning of the academic year, where they can pursue a course in physiological chemistry extending throughout the entire year. The course necessitates, on an average, four hours of laboratory work each day, and attendance at lectures and recitations three or four times each week. Opportunities are afforded also for the carrying on of original investigations, and to students qualified for such work the laboratory is open during the entire day.

Students who are desirous of studying any special subject in physiological chemistry and have but a limited amount of time are received also, provided they are qualified by previous work to pursue the study advantageously.

[Monday to Friday, inclusive, 9.00 A. M. to 1.00 P. M.]

59 *Experimental Physiology.* 3 hrs.

Essentially a laboratory course intended to afford experimental acquaintance with certain departments of physiology, and giving particular reference to general physiological methods. The physiology of muscle and nerve, of the circulation, secretion, etc., is considered in some detail. Other departments are treated in a more elementary manner; a brief survey of the entire field is thus afforded, while certain topics are studied with sufficient thoroughness to give training in technique and appreciation of the aims and methods of research. Opportunity is also afforded for more advanced work in certain lines of experimental physiology.

[Saturday, 9.00 A. M. to 1.00 P. M.]

60 *Physiological Seminary.* 2 hrs. both terms.

A study of the recent advances in physiology and physiological chemistry is undertaken. Informal talks are given on the bearing which recent discoveries in physiology have on existing

views, and the students are required to prepare reports and reviews of work appearing in the current German, French, and English physiological literature.

[Wednesday, 4.00 to 6.00 P. M.]

Professor CHITTENDEN :—

- 61 *Experimental Toxicology.* 2d half 2d term.

A course of about twenty lectures, with demonstrations on the physiological action of the more important mineral and alkaloidal poisons. This course can be supplemented, if desired, by laboratory work on the chemical reactions of poisons, with a study of the methods of detecting and separating poisons.

[Tuesday, Thursday, and Saturday, 8.15 A. M.]

- 62 *Physiology.* 1 hr.

Huxley's *Lessons in Elementary Physiology*, with occasional lectures and illustrative experiments.

[Wednesday, 2.00 P. M., B. L.]

- *63 *Physiological Chemistry.* 4 hrs. 2d term.

Four exercises a week, of a minimum of two hours each, in the laboratory of physiological chemistry. The time is devoted mainly to a study of the chemistry of the connective, contractile, and nervous tissue, of the chemical processes of salivary, gastric, and pancreatic digestions, and so far as the time allows, of other subjects connected with the physiology of nutrition and the chemistry of the excretions.

A laboratory fee is charged for this course. The student in addition must bear the expense of gas, flask, etc., which should not exceed ten dollars.

- *64 *Physiology of Nutrition.* 3 hrs. 1st half 2d term.

Assistant Professor EVANS :—

- *65 *Botany.* 3 hrs. 2d half-year.

An elementary course in the botany of flowering plants. Laboratory work and recitations. The plant and its various organs are studied with respect to their form, structure, and functions, and special emphasis is laid on the relationships of a plant to its environment.

[Monday and Tuesday, 2.00 P. M.; Wednesday, 5.00 P. M.]

66 *General Morphology of Plants.* 4 hrs.

Laboratory work and informal lectures. Beginning with the simplest forms, the various groups of plants are taken up in suitable types, and their structure, development, and mode of life are studied and compared.

The course is limited only to those who show a satisfactory knowledge of the botany of flowering plants.

[Wednesday and Friday, 3.00 P. M.]

67 *Advanced Morphology and Taxonomy of Plants.*

The botanical laboratory is open throughout the year to graduate students, properly qualified, who may wish to pursue advanced studies along some special line in morphological or taxonomic botany. The instruction will be adapted as far as possible to the needs of the individual student.

Dr. COE :—

68 *Cytology and General Embryology.* 4 hrs. 1st term.

Laboratory work, supplemented by lectures, on the animal cell in the principal phases of its activity, with special reference to maturation, fertilization, and cleavage of the ovum. The course will include the practical study of protoplasmic structure and movement, cell with resting nucleus, cell-division, spermary and spermatozoa, ovary and maturation of the ovum, fertilization, cleavage, and formation of primary layers of the embryo. Considerable attention is given to the technique of the subject, and to experimental embryology.

In addition to the above, special courses may be arranged for the second term to meet the requirements of individual students, and such courses may include a study of the later stages of the development of the embryo, with special reference to the vertebrates.

FORESTRY

The following courses given in connection with THE FOREST SCHOOL are open to graduate students.

Assistant Professor TOUMEY :—

69 *Forest Botany.* 2 to 4 hrs. to count as 2 hrs.

The identification of trees and shrubs, their distribution, habit, and uses. Herbaceous and cryptogamic plants will be

briefly considered so far as a knowledge of them may prove useful in Forestry. The course will also include a study of the Anatomy and Physiology of trees.

Professor BREWER :—

70 *Forest Physiography and Meteorology.*

4 hrs. 1st half 2d term.

General conditions necessary to forests ; elementary meteorology ; forests as related to temperature and its range ; to rainfall and its range ; to excesses of weather and climate ; to the mechanical and chemical nature of the soil and ground-water ; to the geological character of the surface ; to the relief-forms of the land ; to other geographical features ; the geographical distribution of forests ; the aspects of forests as related to climate and topography ; and the geological history of forests.

Assistant Professor TOUMEY :—

71 *Introduction to Forestry.*

3 hrs. 1st half-year.

This course is designed to give a comprehensive view of Forestry with special reference to its economic aspects. In it are considered the purpose and scope of Forestry, its importance in national economy, the indirect influence of forests, the relation of the State to forests and Forestry, the need for Forestry and its practice in the United States.

Professor GRAVES :—

72 *Silviculture.*

3 hrs.

Characteristics of forests ; the forests of the world ; forest regions of the United States ; special consideration of trees important in Forestry ; methods of conducting silvicultural studies ; methods of reproducing forests ; treatment of forests. Forest planting will be taught in the spring term by the Assistant Professor of Forestry. Attention will be given to the planting and care of trees in streets and parks for ornament and shade, with notes as to the relative suitability of different trees to these uses.

Professor GRAVES and Mr. BOWERS :—

73 *Forest Administration and Law.* 2 hrs. 1st half 2d term.

Principles underlying the establishment of a forest service. Present laws relating to the administration of forests in the

United States. Rules and regulations relating to the public lands, Forest Reserves and National Parks.

Special consideration of the laws and decisions in the various States with reference to trespass, river driving, breach of contract, damages resulting from forest fires, etc.

Professor GRAVES :—

74 *Forest History.* 1 hr. 1st term, and 1st half 2d term.

Rise of the study of Forestry in foreign countries and in the United States. Present practice of Forestry in different countries.

Assistant Professor TOUMEY :—

75 *Forest Technology.* 2 hrs. 1st term, and 1st half 2d term.

Study of commercial woods in relation to their uses and important characteristics.

VII. MATHEMATICS

JOHN E. CLARK, M.A.	J. WILLARD GIBBS, Ph.D., LL.D.
CHARLES B. RICHARDS, M.A.	EUGENE L. RICHARDS, M.A.
A. JAY DuBOIS, Ph.D.	WILLIAM BEEBE, M.A.
ANDREW W. PHILLIPS, Ph.D.	JAMES PIERPONT, Ph.D.
PERCEY F. SMITH, Ph.D.	SAMUEL E. BARNEY, C.E.
MILTON B. PORTER, Ph.D.	HERBERT E. HAWKES, Ph.D.
WILLIAM A. GRANVILLE, Ph.D.	EDWIN B. WILSON, B.A.

Connected with the department are the Seminary rooms, the Mathematical Laboratory, the Collection of Models, the Mathematical Club, the Engineers' Club.

THE SEMINARY ROOMS, which are at 90 High street, may be used by all students in mathematics. The seminary rooms afford a place for students to meet for the discussion of mathematical questions, and study. There is a good departmental reference library, and also a collection of drawings and models made by students of previous years illustrating various theories. Many of the lectures in this department of past years have been reported and are here to be found bound and ready for consultation.

THE MATHEMATICAL LABORATORY occupies a commodious room on the floor below the seminary rooms. It is well equipped with tools and drawing instruments necessary to construct mathematical models. Students are given direction and advice for the proper and expeditious construction of models more or less elaborate, illustrating the subjects they are studying. Such models and drawings serve to develop the student's geometrical intuition as well as to make more clear the particular theory in hand. Students who expect to become teachers will find the laboratory most useful in acquiring facility in preparing simple models to illustrate subjects they may later have to teach.

THE COLLECTION OF MATHEMATICAL MODELS is one of the most extensive in the country, and is constantly growing. Besides a very complete selection of plaster and thread models from Brill and Schilling, etc., the collection contains a large number of models illustrating the teaching of solid geometry, the theory of equations, and various kinematical principles, as well as the theory of twisted curves and surfaces which have been made under the direction of instructors of the department.

THE MATHEMATICAL CLUB holds fortnightly meetings, at which are presented summaries of articles in current periodicals and recent works on pure and applied mathematics, descriptions and models of new apparatus, also papers containing the results of the original investigations of the instructors and advanced students in this department. All students are encouraged to prepare papers which, while not original, give a comprehensive survey of some field of mathematics, or treat from a new standpoint some question of general interest to the members of the club.

THE ENGINEERS' CLUB meets monthly in North Sheffield Hall for the reading and discussion of papers on subjects relating to the different branches of engineering.

Lectures are occasionally given before the club by professional experts.

PURE MATHEMATICS

Professor CLARK :—

- 1 *Determinants, with applications to Geometry and the Theory of Elimination.* 2 hrs. 1st term.
[Tuesday and Friday, 3.45 P. M.]

- 2 *Differential Equations.* 2 hrs. 2d term.

The short courses in the above subjects are designed especially for the graduate students in the departments of engineering in the Sheffield Scientific School, whose time is mainly occupied with work in those departments.

[Tuesday and Friday, 3.45 P. M.]

Professor GIBBS :—

3 *Vector Analysis.* 3 hrs. 1st term.

Elementary course, in which the simpler problems of geometry, kinematics, and mechanics are treated by vector methods. The matter taught is not entirely unlike that usually given in courses in quaternions, but the method followed is in some respects nearer to Grassmann's than to Hamilton's.

[Monday, Thursday, and Friday, 3.00 P. M., Sloane Lab.]

4 *Advanced Vector Analysis.* 3 hrs. 2d term.

Advanced course, including differentiation with respect to position in space, the theory of the potential and allied functions, and that of linear vector functions. Applications are made to hydrodynamics, to the motion of a rigid body, and to the theory of curvature. This course is especially designed as an introduction to the study of mathematical physics, and is open only to those who have taken the preceding.

[Monday, Thursday, Friday, 3.00 P. M., Sloane Lab.]

5 *Electricity and Magnetism.* 1 hr.

In this course, which is based on Maxwell's theory, the student is taught the use of vector methods in this branch of physics.

6 *Thermodynamics and Properties of Matter.* 2 hrs.

This course is a development of the consequences of the two fundamental laws of thermodynamics, as affording a general theory of physical and chemical equilibrium, and as giving shape to the investigation of the sensible properties of matter.

In the year 1902-1903, in addition to the courses 3 and 4 in vector analysis, the following may be expected :

[7 *Multiple Algebra.* 1 or 2 hrs.

The object of this course is to give some idea of the methods and results of the principal non-arithmetical algebras, especially of the *Ausdehnungslehre* and the algebra of matrices. It is intended for such students as have already some familiarity with the algebra of vectors, derived from the preceding courses or from the study of quaternions.

Omitted in 1901-1902.]

[8 *Electro-magnetic Theory of Light.* 2 hrs.

This course commences with the general theory of harmonic motion and its representation by complex scalar and vector quantities. The laws of electrodynamics are then applied to the

phenomena of the propagation of light in isotropic and æolo-tropic media, and its reflection at a surface between two such media, including the case of an absorbent medium, and the dispersion of colors.

Omitted in 1901-1902.]

Professor BEEBE :—

9 *Celestial Mechanics.* 3 hrs.

Development of formulae and numerical calculations for determining parabolic and elliptic orbits from three observations.

Computation of an ephemeris and reduction of observations for comparison with the ephemeris.

The course may be carried on through a second year to the discussion of perturbations.

Professor PIERPONT :—

10 *Higher Algebra.* 3 hrs. 2d half-year.

This course treats of those algebraic methods and facts which the student will find indispensable for his further progress in pure and applied mathematics.

The topics treated are symmetric functions, substitutions, determinants, solution of linear systems of equations, roots of unity, elimination, resultants, discriminants, invariants, and the numerical solution of algebraic and transcendental equations.

[Tuesday, Thursday, Friday, 5.00 P. M.]

11 *Differential Equations and Function Theory.* 3 hrs.

Topics are: definite integrals, Gamma functions, elements of the function theory of a complex variable, elliptic functions with application to physics and geometry, differential equations, particularly the equations of mathematical physics.

[Tuesday, Thursday, Friday, 4.00 P. M.]

12 *Theory of Functions.* 3 hrs.

The course falls roughly into two parts. The first deals with real variables; the second, with some of the more advanced topics of functions of one complex variable. Considerable attention will be paid to establishing rigorously the fundamental principles and methods.

Professor SMITH :—

- 13 *Advanced Differential Geometry.* 2 hrs.

The theory of differential quadratic forms serves as basis for this course, which will treat by the most modern methods the problem of conformal and spherical representation, the theory of curvature and deformation of surfaces.

- 14 *Foundations of Geometry.* 2 hrs. 2d half-year.

An examination of the axioms and definitions of geometry and the discussion of various geometries founded upon a complete system of axioms and definition.

Assistant Professor BUMSTEAD :—

- 15 *Problems in Mathematical Physics.* 2 hrs.

The application of the general equations of physics to the solution of definite problems possessing theoretical or experimental interest. Certain portions of the following subjects will be taken up: heat-conduction, especially the linear motion of heat and the analogous theory of the transmission of electrical signals by a cable of negligible self-induction; distributions of potential involving the use of conjugate functions, spherical harmonics and Bessel's functions; and some of the simpler problems in the theory of electrical waves in the vicinity of conductors.

Dr. PORTER :—

- 16 *Advanced Calculus.* 3 hrs.

This is a continuation of the first course in calculus, and in turn leads up to courses in higher analysis and geometry. More advanced parts of the calculus are here treated; the complex variable is introduced, and much attention is given to the application of the calculus to the theory of twisted curves and surfaces.

Books of reference: Byerly's *Differential and Integral Calculus*, 2 vols.; Williamson, *Differential and Integral Calculus*, 2 vols.; Czuber, *Differential und Integral Rechnung*, 2 vols.; Serret-Bohlmann, *Differential und Integral Rechnung*; La Vallée Poussin, *Cours d'Analyse*, 2 vols.

[Tuesday, Thursday, Saturday, 9.30 A. M.]

17 *Selected Topics in Differential Equations.*

3 hrs. 2d half-year.

Picard's method of successive approximation and its application to various questions, especially boundary value problems, together with the Cauchy-Lipschitz method and its applications to similar problems, will be dealt with. Among other matters considered will be the theory of curves defined by differential equations and asymptotic solutions.

Students taking this course must have had course 11 or its equivalent.

Dr. GRANVILLE :—

18 *Differential Geometry.*

3 hrs. 1st half-year.

Treats of the more advanced parts of the applications of the calculus to the theory of twisted curves and surfaces, and establishes the usual formulae with especial reference to parametric representation. The course is illustrated by the collection of models in possession of the University. Students in this course are required to construct in the mathematical laboratory models bearing upon the subjects treated in the lectures. Serret-Bohlmann, *Differential Rechnung*; Czuber, *Differential Rechnung*; Picard, *Traité d'Analyse*, vol. I; Joachimsthal, *Allgemeine Theorie der Flächen und der Linien doppelter Krümmung*.

Mr. WILSON :—

19 *Analytical Mechanics.*

3 hrs. 1st half-year.

The object of this course is to introduce the student to the more important facts of statics and dynamics, making use of the calculus. To develop the student's mechanical intuition, a large variety of problems is given.

Books of reference; Bowser's *Analytical Mechanics*; Ziwet's *Mechanics*; Williamson's *Dynamics*; Voigt, *Mechanik*; Appell's *Traité de Mécanique rationnelle*.

[Monday, Wednesday, Friday, 9.30 A. M.]

20 *Projective Geometry.*

3 hrs. 2d half-year.

Both the analytic and synthetic methods will be used to develop the fundamental properties of points, lines, planes, conics, quadric surfaces and the linear transformation in the plane and in space.

ENGINEERING AND PRACTICAL ASTRONOMY

Professor C. B. RICHARDS:—

MECHANICAL ENGINEERING.

This course, arranged for candidates for the degree of Mechanical Engineer, is open also to special graduate students, who are allowed in certain cases to take selected parts. The leading topics are :

21 *Applied Mechanics.*

Including graphical methods in applied kinematics, and in the investigation of mechanisms working with friction ; graphical determinations of the accelerations of the moving parts of machines ; the strength of materials as affecting the proportions of machine elements ; the applications of the principles of hydraulics to the construction and working of turbines and pumps.

22 *Thermodynamics.*

Applications to the compound steam-engine, air compressors and compressed air motors, engines worked by volatile vapors, refrigerating machines, the warming and ventilation of buildings.

23 *Machine-Design.*

In this course the student is engaged in practical exercises under the guidance of the professor in charge, investigating machinery, the designing and making of working-drawings, specifications, and estimates for machines and manufacturing plant. In addition to the study of machines in general, one of the following subjects (at the option of the student) receives particular attention : (a) Marine engineering ; (b) Railway machinery ; (c) Pumping machinery and plant ; (d) Machinery and plant for manufacturing. The student is required to make complete drawings, from new designs, of at least one important piece of machinery under one of these subjects. A compound marine engine and boilers, a locomotive, a turbine driving centrifugal pumps, a blowing-engine for an iron furnace, are examples.

Candidates for the degree of Mechanical Engineer are required to take also a course in mathematics, to sustain a final examination, and to present a satisfactory thesis on a subject approved by the professor in charge of the course.

Professor DuBois :—

CIVIL ENGINEERING.

This course offers instruction for advanced graduate students as well as for those students who are regular candidates for the degree of Civil Engineer. It embraces the following topics :

24 *Mechanics applied to Engineering.* 3 hrs.

Including the application of kinematics, statics, and kinetics to engineering problems.

25 *Construction and Design.* 3 hrs.

Including the strength and properties of materials, construction and design of bridges, roofs, foundations, retaining walls, dams and embankments, masonry arches, sewerage and drainage, improvement of rivers and harbors, specifications and contracts, and the preparation of designs and working-drawings.

Candidates for the degree of Civil Engineer are required to take, in addition, a selected course in mathematics and practical astronomy, and when the facilities in the physical laboratory permit, a course of laboratory work under the superintendence of the professors in charge. They are also required to sustain a final examination, and each to present a satisfactory thesis, accompanied by appropriate designs, upon a subject approved by the professor in charge of the course.

To special students, not candidates for the degree of Civil Engineer, a selection of special topics is allowed.

[Monday, Tuesday, 2.30 P. M., and Wednesday, 12.00 M.]

Professor BEEBE :—

26 *Practical Astronomy.* 2 hrs.

This course consists of observatory work with astronomical transit and chronograph for determination of sidereal and standard time, and with sextant and theodolite for determination of latitude and azimuth, numerical computations for reduction of observations, derivation of formulae, and recitations from Loomis's *Practical Astronomy*.

Assistant Professor BARNEY :—

[27 *Geodesy and Practical Astronomy.* 2d term.

Methods of observation, based on measurements, triangulation field-work ; theory of least squares, adjustment of observations,

and computation of geodetic latitudes, longitudes, and azimuth. The study of practical astronomy embraces the use of the sextant and engineer's transit with solar attachment for determining time, latitude, azimuth, and needle variation.

Omitted in 1901-1902.]

28 *Railway Surveying.* Three weeks in September.

A preliminary line for a railroad is run out, and from the contour map so obtained a final line is located, staked out, and cross-sectioned, and estimates are made for construction. The field-work begins the first Monday in September and occupies the entire time for three weeks.

29 *Sanitary Engineering.*

a. *Water Supply.* 1st term.

Methods of collecting and distributing water. Designing of reservoirs, pipe systems, and filtration plants.

b. *Sewer Systems.* 2d term.

Design and construction of sewer systems, etc.

VIII. THE FINE ARTS

JOHN F. WEIR, N.A., M.A.

JOHN H. NIEMEYER, M.A.

Professor WEIR :—

1 *Technical Course in Painting.*

Only those students who have been qualified by a course in drawing can enter the course in painting. The hours for students of the Graduate School must be determined individually. The charge for instruction, entitling the student to all the privileges of the School, is \$25 for the college year.

2 *Course in Modeling.*

The course consists in modeling from the antique and from the living figure and is supplemented by the lectures given in course 1.

Professor NIEMEYER :—

4 *Course in Drawing.*

Students in the Graduate School may pursue the course in drawing in the Art School without restriction as to time. The charge for instruction is \$25 for the college year, entitling the students to all the privileges of the School as arranged for students from other departments of the University.

IX. MUSIC

HORATIO W. PARKER, M.A. SAMUEL S. SANFORD, M.A.
HARRY B. JEPSON, B.A., Mus.B. ISIDOR TROOSTWYK.

Professor PARKER :—

1 *Counterpoint.*

A thorough knowledge of Harmony is required of students in this course.

The work is the harmonizing and supplying melodious additional voices to choral and other melodies used as *Canti Firmi*.

The different orders of Counterpoint in two, three, and four voices ; also double counterpoint, and more or less free imitative writing.

Students in this course are encouraged to try the simpler forms of free composition. No text-book is used.

[Tuesday and Thursday, 3.00 P. M.]

2 *Strict Composition.*

The more severe kinds of composition form the basis of work in this course.

Harmony in Five and more parts ; Threefold and Fourfold Counterpoint ; Four- and Three-part Fugues for voices or for instruments ; Canons of various kinds, with or without accompaniment of free voices ; Free treatment of different kinds of thematic material.

This course is preparatory to course 6. No text-book is used.

[Tuesday and Thursday, 2.00 P. M.]

[3 *The History of Music.*

Lectures on the development of music from its earliest stages. History of Church Music from the time of Gregory ; History of Opera and Oratorio ; Biographical sketches of famous composers, with description and analysis of their principal works ; History of purely instrumental music, showing the growth and development of musical forms up to their culmination in Beethoven.

Practical illustrations of the lectures on musical forms are given in the class-room.

Omitted in 1901-1902.]

4 *Instrumentation.* 2 hrs.

This course is open only to students who have done the work of courses 1 and 2, and it is strongly recommended that course 4 also should precede it.

Lectures are given on the nature, compass, tone-color, and other characteristics of all the instruments of the modern orchestra, with illustrations of their use by great composers.

Exercises in the practical orchestration of short pieces from the works of classic and modern composers, in analyzing, reading and playing from orchestral scores, beginning with Haydn and Mozart Symphonies, and embracing modern works of various kinds.

[Wednesday and Friday, 3.00 P. M.]

5 *Free Composition.*

This course is open only to students who have done the work of courses 1, 2, 4, and 5, and have shown unmistakable talent for original composition. Several of the smaller forms of free instrumental and vocal music are composed by the students, and studies are made for larger compositions, which are finished in case the thematic material offered is of sufficient merit.

At the close of the year the student is required to produce an extended work, probably in sonata form.

[Wednesday and Friday, 2.00 P. M.]

Assistant Professor JEPSON :—

6 *Harmony.* 2 hrs.

The study of chords, their construction, relations and progressions. This course covers the following subjects:

Intervals, triads, seventh chords, modulations, chromatically altered chords, suspension, organ point, passing and changing notes.

Figured bass is used only as a means of designating chords. Attention is turned at once to the harmonizing of melodies.

The original principles from which rules are derived are discussed and students are encouraged to exercise and cultivate their own judgment in the application of these principles.

Particular attention is given to the natural melodic and harmonic tendencies of tones and intervals. The subject of modulation is treated with special care and at length. Exercises are corrected in the class-room with explanations and illustrations.

G. W. Chadwick's *Harmony* is used as text-book.

[Tuesday and Thursday, 4.00 P. M.]

Professor SANFORD, Assistant Professor JEPSON, and Mr.
TROOSTWYK:—

7 *Practical Music.*

Instruction is given in Piano-, Organ-, and Violin-playing to a limited number of students. Fees range from \$50.00 to \$150.00 for the college year.

Each student of the piano-forte receives individual instruction, under the supervision of Professor Sanford, who will in person instruct a limited number of advanced students in the higher branches of the art, particularly in *ensemble* and concert-playing.

No student is admitted to a course in practical music who has not been admitted to one of the theoretical courses.

Students of organ-playing receive personal instruction from Prof. Jepson, and of violin-playing from Mr. Troostwyk.

X. PHYSICAL EDUCATION

JAY W. SEAVER, M.A., M.D.

WILLIAM G. ANDERSON, M.D.

Dr. SEAVER and Dr. ANDERSON :—

Physiology and Gymnastics. 2 hrs.

This course is designed for those who intend to teach gymnastics or to direct departments of physical education in institutions of learning. The work comes under two general branches as follows :

1 *Physiology.*

This work consists of one recitation or lecture a week with Dr. Seaver, during the year. The first term is devoted to elementary physiology. The second term is devoted to human physiology ; special attention being given to a study of the circulation, respiration, digestion, and excretion. The hygienic importance of these topics is carefully studied. The third term is given to a study of sanitary science. Collateral reading will be required during the third term.

Dr. Seaver may be consulted at the Gymnasium from 9.30 to 10.30 A. M. daily.

[Thursday, 7.00 P. M., University Gymnasium.]

2 *Principles and Practice of Gymnastics.*

Under this head will be discussed by Dr. Anderson (a) the scientific basis of physical training ; (b) history of gymnastics and growth of the various systems ; (c) means employed, such as apparatus and appliances ; (d) physical examinations and measurements ; (e) pedagogy of gymnastics. Required textbooks : Anderson's *Gymnastic Terminology* and *Methods of Teaching Gymnastics*.

Members of the class will be called upon to arrange exercises for other classes, to classify movements for overcoming common physical defects, and to do practice work in teaching gymnastics.

Dr. Anderson may be consulted at the Gymnasium from 4 to 6 P. M.

[Monday and Thursday, 11.30 A. M., University Gymnasium.]

PEABODY MUSEUM OF NATURAL HISTORY

CURATORS

CHARLES E. BEECHER, Ph.D., *Curator of the Geological Collection*

ADDISON E. VERRILL, M.A., *Curator of the Zoological Collection*

EDWARD S. DANA, Ph.D., *Curator of the Mineralogical Collection*

The first floor of the Museum building is devoted to the department of Mineralogy and to the purposes of a large lecture-room. The minerals occupy cases in the west room, the door of which fronts the entrance to the Museum. The minerals of the Gibbs collection, purchased in 1825, and the extensive accumulations since made, are here preserved and for the most part on exhibition, making it one of the largest public collections in the country. Besides minerals, the exhibition-room contains one of the most extensive collections of meteorites in the country. A large room on the same story is arranged for mineralogical and blowpipe instruction, with desks and a students' cabinet of minerals, under the charge of Professor Penfield. An adjoining room contains the laboratory of physical mineralogy; also the library and cabinet of Professor Brush, which add greatly to the means of study and investigation in Mineralogy.

The second floor is given up to Geology and Paleontology. The southern room contains the exhibition of vertebrate fossils, among which may be mentioned the skeleton of a large Dinosaur (*Claosaurus*), specimens of toothed birds, Mastodon, remains of Miocene *Brontotheridae*, Eocene *Dinocerata*, skeletons of Moas from New Zealand, and the skull of *Triceratops*, a gigantic Dinosaur from Wyoming.

The western exhibition-room is occupied mainly by a collection of invertebrate fossils, arranged zoologically. Some of the more important exhibits are: type specimens

illustrating the structure, development, and classification of Trilobites, large slabs of Crinoids from Indiana and Kansas, and many series showing the stages of growth in the Brachiopods and Corals.

Of the collection of foot-prints belonging to the University, only a few fine slabs are on exhibition, part of them in each of the two exhibition-rooms of the second story.

The third story is occupied with the zoological collections, so far as there is room for their exhibition. The general invertebrate collection occupies the western room, and is noteworthy for the extensive series of sponges, corals, echinoderms, models of a large Octopus and Squid, and for special collections from New England, the Pacific Coast of America, Bermuda, Florida, etc.

The southern exhibition-room of the zoological story contains a collection of skeletons, as well as mounted and alcoholic specimens, including a nearly complete series of the vertebrate species inhabiting New England.

The second and third stories have also laboratories and work-rooms, devoted mainly to the department represented in the exhibition-rooms on the same floor. The Petrographical laboratory is likewise in the second story. The rooms contain also large collections of specimens arranged in drawers and trays, which are open to special students in the department. Each department of the Museum has its own special library.

In the fourth story are a number of store-rooms and an Archæological collection, recently presented to the University by the late Professor Marsh.

The basement is used for work-rooms and store-rooms, and contains a vast amount of specimens, especially in the department of Paleontology and Zoology.

MINERALOGY

The department of Mineralogy occupies the first floor of the Peabody Museum. In one of the large rooms the Yale

College Collection, of which Professor Dana is curator, is placed on exhibition and is accessible at all times to the public, except on holidays and during the month of August. The collection is a very complete and valuable one, the nucleus of which is the famous Gibbs Collection, purchased by the college in 1825 from Colonel George Gibbs of Rhode Island for \$20,000. There are also on public exhibition in the cabinet-room the Yale College Collection of Meteorites and a portion of the Blum Collection of Pseudomorphs. The last-named collection is that of the late Professor J. Reinhard Blum of the University of Heidelberg, purchased by the college about thirty years ago. This collection of pseudomorphs is especially valuable, as it contains the type specimens described by Professor Blum in his book "*Die Pseudomorphosen des Mineralreichs, 1843-1879.*"

The department of Mineralogy in the Sheffield Scientific School occupies two adjoining rooms in the Museum. In one of these there are contained the private collection and library of Professor George J. Brush. Professor Brush started his mineral collection about fifty years ago, with the idea of bringing together specimens for the purpose of study and investigation, and the collection has grown to be a very extensive and valuable one. It is especially important, as it contains the type specimens of the large number of minerals which have been investigated in the chemical and mineralogical laboratories of the Sheffield Scientific School. The collection is used for the purposes of instruction in mineralogy and crystallography, and it contains much material for chemical and crystallographic investigation. In addition to the Brush collection there are collections of labeled and unlabeled specimens which are at all times accessible to students and have been selected especially for purposes of instruction in determinative and descriptive mineralogy; also collections of crystals, and of wooden and glass models for illustrating the science of crystallography. The depart-

ment is well equipped with goniometers, microscopes, polariscopes, and apparatus necessary for the physical and optical examination of crystals.

One room is fitted up as a laboratory for determinative mineralogy and as an analytical laboratory for the complete chemical investigation of mineral substances. The importance of careful chemical work in connection with the investigation of mineral substances cannot be overestimated, and analytical chemistry has always been insisted upon as a foundation for mineralogical work at Yale.

Very complete series of journals and works pertaining to mineralogy and crystallography are contained in the libraries of Professors Brush and Dana, and in the Yale University Library.

PETROLOGY

Work in petrology is carried on in a large well-lighted laboratory in the Peabody Museum. It is fitted with all the necessary apparatus, including the latest model Fuess microscopes. The systematic rock collection is large and arranged to be readily accessible to the student. Its value in addition is greatly increased by the considerable amount of type material it contains and the presence of interesting and instructive local collections from localities difficult of access. It is enriched also by collections of great historical interest which have accumulated at the University during the past century. The greater part of these collections have corresponding thin sections.

A department library, card catalogued and kept up to date, in addition to the other libraries of the University and in the Museum, gives a complete and ready command of the literature in this branch of science.

Complete facilities in apparatus and machinery for the sawing, grinding, and preparation of thin rock sections are provided in a special room in the basement of the Museum.

The extensive collections of minerals and apparatus of the mineralogical department, under proper restrictions, are also available for petrographical instruction of students in this department.

PALAEONTOLOGY

The Paleontological Section of the Peabody Museum contains collections representing the departments of fossil vertebrates, invertebrates, and plants. The exhibition series of fossil vertebrates occupies one of the large halls in the Museum building. Some of the remarkable types described by the late Professor O. C. Marsh are here displayed. The bulk of the vertebrate collections, however, are stored in rooms not open to the general public, but are accessible to special students.

The invertebrate exhibition hall contains collections representing the different orders of invertebrate animals, and is especially rich in series showing the stages of development and structural details. In the storage rooms are collections from many parts of the world. These may be used by students in Paleontology in investigating special problems and for general work.

In paleobotany, the museum possesses extensive collections of fossil Cycads and Carboniferous plants.

A department library devoted to Geology and Paleontology occupies a separate room, and contains most of the important works as well as the periodical literature relating to these sciences.

GRADUATE SCHOOL

LIST OF STUDENTS

IN ATTENDANCE 1900-1901

WITH THEIR MAJOR SUBJECT OF STUDY

[The major subject of study is stated in each case. Students marked "A." are pursuing courses of study in absence under the direction of the Faculty for the degree of Master of Arts, Mechanical Engineer, or Civil Engineer.]

Elizabeth Frances Abbe, M.A. Wellesley College 1888	Dorchester, Mass	395 Crown st. Classics
Mary Winchester Abbott, B.A. Vassar College 1894	West Haven, Conn.	11 College st. English
George Ferdinand Abel, B.A. Gettysburg College 1897, S.D. Yale University 1900	Philadelphia, Pa.	2 E. D. Philosophy
Charles Edgar Adamson, M.A. Boston University 1882	Philadelphia, Pa.	96 W. D. Biblical Literature
Hubert Hillary Sufferen Aimes, PH.B. Yale University 1897	West Haven, Conn.	West Haven History
Alfred Akerman, B.A. Georgia University 1898	Cartersville, Ga.	55 Prospect st. Botany
Carroll Storrs Alden, B.A. Yale University 1898	Chicago, Ill.	399 Elm st. English
Robbins Battell Anderson, B.A. Yale University 1899	Duluth, Minn.	A. English
William Gilbert Anderson, M.D. Western Reserve Univ. 1883	Cleveland, O.	120 College st. Biology
Henry Cotheal Andrews, B.A. Yale University 1899	Fishkill, N. Y.	1044 Chapel st. History
Kan-Ichi Asakawa, B.L. Waseda College, Japan, 1895, Dartmouth College 1899	Fukushima, Japan	105 Park st. History
John Whitney Avery, B.A. Yale University 1893	New Haven, Conn.	23 Brown st. Classics

George Merrick Baker, B.A. Yale University 1900	<i>Hartford, Conn.</i> German	114 High st.
Thomas Nelson Baker, B.A. Boston University 1893. B. D. Yale University 1896	<i>New Haven, Conn.</i> Philosophy	35 Foote st.
Ernest Hickok Baldwin, B.A. Yale University 1891, M.A. 1897	<i>New Haven, Conn.</i> History	150 Grove st.
Cecil Kittredge Bancroft, B.A. Yale University 1891	<i>Andover, Mass.</i> Classics	213 D.
Amy Louise Barbour, B.A. Smith College 1891	<i>Hartford, Conn.</i> Classics	70 Whalley av.
James Foote Barnett, B.A. Yale University 1891	<i>Grand Rapids, Mich.</i> History	A.
Samuel Eliot Bassett, B.A. Yale University 1898	<i>New Haven, Conn.</i> Athens, Greece. Classics	
Ernest Turrell Bauer, B.A. Yale University 1900	<i>New Haven, Conn.</i> 255 Sherman av. Modern Languages	
Hugh Aiken Bayne, B.A. Yale University 1892	<i>New York City</i> History	A.
William DeVerne Beach, B.A. Yale University 1897 B.D. Yale University 1900	<i>New Haven, Conn.</i> Biblical Literature	631 Elm st.
Alling Prudden Beardsley, B.A. Wesleyan University 1898	<i>Derby, Conn.</i> Chemistry	Derby
Silas Palmer Beebe, B.S. Harvard University 1900	<i>New Haven, Conn.</i> 106 Mansfield st. Physiology and Physiol. Chemistry	
Gertrude Harper Beggs, B.A. University of Denver 1893	<i>St. Louis, Mo.</i> Classics	135 Howe st.
Mary Kendrick Benedict, B.A. Vassar College 1897	<i>Cincinnati, O.</i> Philosophy	70 Howe st.
Arthur Dart Bissell, B.A. Amherst College 1879	<i>Claremont, Cal.</i> Philosophy	38 Pearl st.
James Wilson Bixler, B.A. Amherst College 1882	<i>New London, Conn.</i> New London Social Science	
Stanley Francis Blomfield, B.A. Olivet College 1895, B.A. Yale University 1899	<i>Stony Creek, Conn.</i> Stony Creek Biblical Literature	
John Joseph Blythe, M.A. Ohio Wesleyan University 1897, B.D. Wesl. Theol. Coll., Montreal 1899	<i>Montreal, Canada</i> Biblical Literature	Bridgeport
Alfred Gintner Bookwalter, B.A. Yale University 1897	<i>New York City</i> Economics	1044 Chapel st.

Walter Minor Bradley, PH.B. Yale University 1899	New Haven, Conn. 1346 Chapel st. Chemistry
Margaret Rooker Bradshaw, M.A. Vanderbilt University 1893	Brookfield, Mo. 105 Dwight st. English
Mercy Agnes Brann, B.A. Colby University 1897	Dover, Me. 74 Lake pl. English
Henrietta Foster Brewer, B.A. University of California 1893	Berkeley, Cal. 56 Grove st. Classics
Halbert Hains Britan, B.A. Hanover College 1898	Hanover, Ind. 29 High st. Philosophy
Wilton Everett Britton, B.S. New Hampshire College Agric. 1893	New Haven, Conn. 1317 Boulevard Botany
Ezekiel Stoddard Bronson, B.A. Yale University 1900	New Haven, Conn. 58 Dwight st. Chemistry and Geology
James Ansel Brooks, PH.B. Yale University 1898	Derby, Conn. Derby Mechanical Engineering
Lester Dorman Brown, B.A. University of Wooster 1894	Wooster, O. 73 Lake pl. Classics
William Adams Brown, B.A. Yale University 1886, M.A. Yale University 1888	New York City New York City Philosophy
Abraham Royer Brubacher, B.A. Yale University 1897	Shaefferstown, Pa. 20 Carmel st. Classics
Winthrop Buck, B.A. Yale University 1900	Nazareth, Pa. A. History
Harry Albert Bullock, B.A. Amherst College 1899	New Haven, Conn. 70 Church st. History
Frank Scott Bunnell, B.A. Yale University 1894	Stratford, Conn. 312 Elm st. Classics
Frederick Merwin Burgess, B.A. Yale University 1897	New Haven, Conn. 226 Whalley av. English
Eugene Watson Burlingame, B.A. Yale University 1898	Albany, N. Y. A. Greek
Katherine Jeannette Bush	New Haven, Conn. 133 Howe st. Natural Science
Jennie Isabel Campbell, B.A. Smith College 1893	Wallingford, Conn. Wallingford Latin
Henry Seidel Canby, PH.B. Yale University 1899	Wilmington, Del. 86 Wall st. English
Arthur Lisle Cardus, B.A. University of Rochester 1896	Rochester, N. Y. 71 W. D. Philosophy

Frederic James Carnell, PH.B. Yale University 1900	Bristol, Conn.	58 N. S. H. Physics
Otho Grandford Cartwright, B.A. Yale University 1893	New Haven, Conn.	119 Wall st. History
William Woods Chandler, B.A. Yale University 1896	New Haven, Conn.	21 High st. Music
Charles Sidney Chapman, B.AGR. Connecticut State College 1898	Westbrook, Conn.	360 Prospect st. Botany
George Millet Chase, B.A. Bates College 1893	Lewiston, Me.	10 Ashmun st. Classics
Alfred Knight Chittenden, PH.B. Yale University 1900	New Haven, Conn.	83 Trumbull st. Botany
William Churchill, B.A. Yale University 1897	New Britain, Conn.	71 W. D. Philosophy
Charles Upson Clark, B.A. Yale University 1897	Brooklyn, N. Y.	Rome, Italy Classics
Clarence Carroll Clark, B.A. Johns Hopkins University 1896	Baltimore, Md.	56 Grove st. English
Charles Cameron Clarke, Jr., B.A. Yale University 1883	New Haven, Conn.	65 Grove st. Romance Languages
Helen MacGregor Clarke, B.A. Wellesley College 1890	Durham, Conn.	33 Wall st. English
Thadeous Hugh Claypool, B.A. Yale University 1898	Marshall, Tex.	115 Park st. English
George Edwards Clement, B.A. Harvard University 1900	Boston, Mass.	360 Prospect st. Botany
Frederick Sears Coe, PH.B. Yale University 1899	Newark, N. J.	52 Wall st. Mechanical Engineering
Elizabeth Mary Comstock, B.A. Indiana State Univ. 1892	Richmond, Ind.	38 Lynwood st. English
Lewis Roberts Conklin, B.A. Yale University 1896	Monroe, N. Y.	A. English
Charles Montague Cooke, Jr., B.A. Yale University 1897	Honolulu, H. I.	112 College st. Biology
William Lee Corbin, B.A. Amherst College 1896 M.A. Yale University 1900	Norfolk, Conn.	E. D. English
Francis Cross, Jr., B.A. Yale University 1900	New Haven, Conn.	156 Spring st. Classics
Charles Edward Curtis, PH.B. Yale University 1888	New Haven, Conn.	254 Prospect st. Political and Social Science

James Elbert Cutler, B.A. University of Colorado 1900	Boulder, Colo.	373 Crown st. Political and Social Science
George Barton Cutten, B.A. Yale University 1897	Amherst, Nova Scotia	80 First st. Philosophy
Albert Sargent Davis, B.A. Yale University 1896	New York City	A. English
Helen Howard Davis, B.A. Wellesley College 1899	New Haven, Conn.	336 Humphrey st. English
Clarence Shepard Day, Jr., B.A. Yale University 1896	New York City	A. English
George Parmly Day, B.A. Yale University 1897	New York City	A. English
Arthur Lyman Dean, B.A. Harvard University 1900	Dedham, Mass.	140 Shelton av. Physiology and Physiol. Chemistry
Edgar Ezekiel DeCou, B.S. University of Wisconsin 1894. M.A. University of Chicago 1897	Evansville, Wisc.	399 Elm st. Mathematics
Moreau Delano, B.A. Yale University 1898	New York City	A. English
Ella Marinda Deyo, B.A. Mt. Holyoke College 1897	Honeoye, N. Y.	70 Howe st. Greek and English
Sherwood Owen Dickerman, B.A. Yale University 1896	New Haven, Conn.	140 Cottage st. Classics
John Casper Diehl, B.A. Yale University 1887	Erie, Pa.	A. Latin
George Francis Dominick, Jr., B.A. Yale University 1894	New York City	A. English
Edgar Selah Downs, B.A. Yale University 1898	Southington, Conn.	90 S. M. Physics
Alfred Yartan Dubuque, B.A. Yale University 1899	Albany, N. Y.	128 High st. Romance Languages
Samuel William Dudley, PH.B. Yale University 1900	Westville, Conn.	Westville Mechanical Engineering
Mary Dunham, B.A. Indiana University 1898	North Richmond, Ind.	39 Lynwood st. Classics
Edward Lewis Durfee, B.A. Yale University 1896	Palmyra, N. Y.	90 Park st. History
David Brewer Eddy, B.A. Yale University 1898	Leavenworth, Kans.	A. Biblical Literature

Jay Glover Eldridge, B.A. Yale University 1896, M.A. Yale University 1899	Penfield, N. Y. 1136 Chapel st. German
Clara Eliza Emerson, B.A. Wellesley College 1891	Beloit, Wisc. 84 Norton st. English
Sara Anna Emerson, B.A. Boston University 1877	Watertown, Mass. 134 Howe st. Biblical Literature
Christopher Temple Emmet, M.E. Stevens Institute of Technology	Portchester, N. Y. 208 Canner st. Botany
Frederick Joy Fairbank, B.A. Illinois College 1897	Jacksonville, Ill. 54 Garden st. Latin
Hollon Augustine Farr, B.A. Yale University 1896	Athol, Mass. 170 F. German
Horace Jewell Fenton, B.A. Yale University 1899	Willimantic, Conn. 139 High st. English
George Willis Field, B.A. Yale University 1899	New York City A. English
Samuel Emerson Findley, B.A. Buchtel College 1894	Akron, O. 83 Grove st. Greek
Henry Fletcher, B.A. Yale University 1898	Brooklyn, N. Y. A. English
John Francis Flynn, B.A. Yale University 1899	Meriden, Conn. 46 College st. Classics
Joseph Fogelberg, B.A. Bethany College 1899	Lindsborg, Kans. 59 Prospect st. German
Emily Howard Foley, B.A. Wellesley College 1893	St. Louis, Mo. 70 Howe st. English
William Ebenezer Ford, Jr., PH.B. Yale University 1899	New Haven, Conn. 16 Lynwood st. Mineralogy
Allyn King Foster, TH.M. So. Baptist Theol. Sem. 1894	New Haven, Conn. Lake Place English
Frederic Henry Beecher Fowler, PH.B. Yale University 1899	New Haven, Conn. 308 Humphrey st. Electrical Engineering
George Levi Fox, B.A. Yale University 1874, M.A. Yale University 1885	New Haven, Conn. 7 College st. Classics
Arthur Sullivan Gale, B.A. Yale University 1899	Jacksonville, Fla. 124 W. D. Mathematics
Silas Wright Geis, B.L. Univ. of California 1898	Fresno, Cal. 83 Sachem st. Political and Social Science

Fred Macdonald Gilbert, B.A. Yale University 1898	Brooklyn, N. Y. Biblical Literature	A.
George Wilbur Fiske Gillette, PH.B. Yale University 1896	New Haven, Conn. 383 Whalley av. Civil Engineering	
Walter Gilliam, B.A. National Normal University 1898	Bonham, Tex. 25 High st. Political and Social Science	
William Anthony Granville, PH.D. Yale University 1897	New Haven, Conn. 7½ Eld st. Mathematics	
Thomas Ezekiel Gravatt, B.S. Rutgers College 1897	Clarksburgh, N. J. 73 Lake pl. Mathematics	
Arthur Harmount Graves, B.A. Yale University 1900	Hartford, Conn. 51 N. S. H. Botany	
Frank Eugene Hale, B.A. Yale University 1900	Hartford, Conn. 363 Orchard st. Chemistry	
Perry Titus Wells Hale, PH.B. Yale University 1900	Portland, Conn. 135 Howe st. Civil Engineering	
Francis Jenks Hall, B.A. Yale University 1899	Saltsburg, Pa. Biblical Literature	A.
Robert William Hall, PH.B. Yale University 1895, M.A. Harvard University 1898	Cambridge, Mass. 48 N. S. H. Biology	
George Arthur Hanford, B.A. Yale University 1898	Syracuse, N. Y. 2 Hillhouse av. Physiology and Physiol. Chemistry	
Henry Lee Hargrove, B.A. Univ. of Nashville 1891, M.A. Univ. of Nashville 1892	Waco, Tex. 723 Elm st. English	
Pinkney Settle Hargrove, B.A. Yale University 1900	Waco, Tex. 363 Orchard st. English	
Josiah Harmar, PH.B. Yale University 1892	Philadelphia, Pa. Mechanical Engineering	A.
Francis Burton Harrison, B.A. Yale University 1895	New York City English	A.
Frederick Brown Harrison, PH.B. Yale University 1899	New Haven, Conn. 83 Grove st. English	
Charles Montgomery Hathaway, Jr., B.A. Yale University 1899	Olyphant, Pa. 90 S. M. English	
Philip Bovier Hawk, B.S. Wesleyan University 1898, M.S. Wesleyan University 1900	East Branch, N. Y. 118 W. D. Physiology and Physiol. Chemistry	

Herbert Edwin Hawkes, B.A. Yale University 1896, PH.D. Yale University 1900	<i>New Haven, Conn.</i> 1494 Chapel st. Mathematics
William Wilson Heaton, B.A. Yale University 1896	<i>New York City</i> A. Economics
William Milton Hess, B.A. Yale University 1896, PH.D. 1899, B.D. 1900	<i>New Haven, Conn.</i> 135 Elm st. Philosophy
Lawrence Ilsley Hewes, B.S. Dartmouth College 1898	<i>Braintree, Mass.</i> 285 York st. Mathematics
Mary Cornwall Hewitt, B.A. Smith College 1897	<i>New Haven, Conn.</i> 65 Dixwell av. History
Robert Taylor Hinton, B.A. Yale University 1900	<i>Paris, Ky.</i> 70 W. D. Social Science and History
Robert Reynolds Hitt, B.A. Yale University 1898	<i>Washington, D. C.</i> A. English
Abbie Sylvia Hodgetts, B.A. Nebraska Wesleyan University 1896	<i>Unionville, Conn.</i> 568 Chapel st. English
Bertha Estelle Holbrook, B.A. Mt. Holyoke College 1894	<i>Mills College, Cal.</i> 74 Lake pl. English
Richard Holbrook, B.A. Yale University 1893	<i>Yonkers, N. Y.</i> 212 Orchard st. Romance Languages
Frederick Augustus Holden, B.A. Amherst College 1878	<i>Morris, Conn.</i> Morris Biblical Literature
George Clay Hollister, B.A. Yale University 1896	<i>New York City</i> A. Economics
Donald Russell Hooker, B.A. Yale University 1899	<i>New Haven, Conn.</i> 436 Orange st. Physiology and Physiol. Chemistry
Gerard Beekman Hoppin, B.A. Yale University 1891	<i>New York City</i> A. English
Stuart Hotchkiss, PH.B. Yale University 1900	<i>New Haven, Conn.</i> 55 Hillhouse av. Natural Science and Law
Clara Marvin Hubbell, B.A. Smith College 1887	<i>Detroit, Mich.</i> 409 Orange st. English
Grace Wakeman Hubbell, PH.B. Oberlin College 1894	<i>New York City</i> 409 Orange st. English
Robert Ernest Hume, B.A. Yale University 1898	<i>Ahmednagar, India</i> 24 Home pl. Philosophy
Lola LaMotte Iddings, B.A. Vassar College 1889	<i>Orange, N. J.</i> Orange English

Howard Maxwell Ingham, PH.B. Yale University 1897	Philadelphia, Pa. Mechanical Engineering	A.
William Julius Edward Jente, B.A. Yale University 1897	New Haven, Conn. German	97 Bristol st.
Carl Wilhelm Johnson, B.A. Bethany College 1900	Lindsborg, Kans. German	33 Lock st.
Treat Baldwin Johnson, PH.B. Yale University 1898	Bethany, Conn. Chemistry	162 S. L.
Riveda Harding Jordan, B.A. Yale University 1893	St. Joseph, Mo. English	A.
Tyitichi Kairiyama, PH.B. Cornell University, 1898	Yokohama, Japan, Philosophy	373 Crown st.
Elizabeth Galloway Kane, B.A. Mt. Holyoke College 1894	Waterbury, Conn. History	70 Howe st.
Kevork Harutune Karzanjian, B.D. Yale University 1892	Armenia, Turkey Philosophy	200 Edgewood av.
Kiroku Kawabe Doshisha University, Japan, 1893	Kyoto, Japan Philosophy	90 W. D.
Robert Henry Keener, B.A. Yale University 1899	St. Joseph, Mo. Greek	37 Lynwood st.
Albert Galloway Keller, B.A. Yale University 1896, PH.D. Yale University 1899	New Haven, Conn. Political and Social Science	183 Lawrence st.
Margaret Dutton Kellum, B.A. Bryn Mawr College 1892	Baltimore, Md. English	1193 Chapel st.
Mabel Howard Kennedy, B.A. Woman's College of Baltimore 1896	Charles Town, W. Va. English	47 York sq.
Virginia Wadlow Kennedy, B.A. Woman's College of Baltimore 1896	Charles Town, W. Va. English	47 York sq.
Albert Emmett Kent, B.A. Yale University 1897	New York City German	A.
Edwin Burruss King, B.A. Yale University 1898	Southboro, Mass. English	A.
Howard La Field, B.A. Yale University 1891	Bridgeport, Conn. German	Bridgeport
Mabelle Alpina Land, B.A. University of Wyoming 1899	Laramie, Wyoming English	17 Whalley av.
Joshua Larson, B.A. Augustana College 1889, M.A. Yale University 1899	Altoona, Ill. Mathematics	149 St. John st.

George Lauder, Jr., PH.B. Yale University 1900	Pittsburg, Pa. 131 Grove st. Chemistry
Jessie May Law, B.A. University of Nebraska 1894	New Britain, Conn. New Britain History
Edwin Hoyt Lockwood, M.E. Yale University 1892	New Canaan, Conn. 79 Division st. Mathematics and Physics
Gilbert Lovell, B.A. Yale University 1900	Plainfield, N. J. A. Biblical Literature
Adam Ruth Lutz, B.A. Franklin and Marshall College 1896	Strasburg, Pa. 112 W. D. Biblical Literature
Frederick Bliss Luquiens, B.A. Yale University 1897	New Haven, Conn. Paris, France Romance Languages
Cloyd North McAllister, B.A. Yale University 1892 PH.D. Yale University 1900	St. Joseph, Mo. 33 Lake pl. Philosophy
Thomas McCandless, B.A. Yale University 1900	Meriden, Conn. 45 E. D. Biblical Literature
Frank Mitchell McClenahan, B.A. Yale University 1900	Allegheny City, Pa. 22 Whalley av. History
Eugene Irving McCormac, B.S. Upper Iowa University 1896	Sumner, Iowa 27 Sylvan av. History
Theodore Dwight McDonald, B.A. Yale University 1897	New York City A. English
James Camelford MacInnes, B.A. Amherst College 1894	Galena, Ill. 110 W. D. Philosophy
Mary Elizabeth MacLean, PH.B. University of California 1889	Oakland, Cal. 83 Grove st. English
Washiro Maki Doshisha University, Japan, 1892	Yamanashi-Ken, Japan 34 E. D. Philosophy
Winfield Scott Manship, B.A. Wesleyan University 1886, S.D. Yale University 1889	S. Meriden, Conn. S. Meriden Philosophy
Ray Leon Marston, B.A. Bowdoin College 1898	Skowhegan, Me. 360 Prospect st. Zoology
William Linton Mather, PH.B. Yale University 1896	New Haven, Conn. 247 St. Ronan st. Civil Engineering
Sogo Matsumoto Kelo-gijiku College 1897	Tsu Ise, Japan 363 Crown st. History
Henry Franklin Merriam, PH.B. Yale University 1900	Summit, N. J. 162 S. L. Chemistry

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|---|---|
| Edward DeWitt Merriman, B.A.
Yale University 1872 | <i>New Haven, Conn.</i> 154 Elm st.
History |
| Floyd Jay Metzger, PH.B.
Buchtel College 1899 | <i>Akron, O.</i> 10 Ashmun st.
Chemistry |
| Kumazo Mikami, B.D.
Trinity College, Japan, 1890 | <i>Tokyo, Japan</i> 6 Trumbull st.
Political and Social Science |
| Robert Hume Miller, B.A.
Yale University 1897 | <i>New Haven, Conn.</i> 133 Wall st.
Classics |
| Charles Elmendorf Mills, B.A.
Colgate University 1897 | <i>Limerick, Me.</i> 38 Mansfield st.
English |
| Sydney Knox Mitchell, B.A.
Yale University 1898 | <i>Lakeville, N. Y.</i> 122 Wall st.
History |
| Ishiro Miyake,
Doshisha University, Japan, 1894 | <i>Kumamoto, Japan</i> 120 W. D.
Philosophy |
| Herbert Henry Moninger, B.A.
Bethany College 1898
M.A. West Virginia Univ. 1899 | <i>Washington, Conn.</i> 31 E. D.
Semitic Languages |
| George Redington Montgomery, B.A.
Yale University 1892 | <i>New Haven, Conn.</i> 84 W. D.
Philosophy |
| Seth Enoch Moody, B.S.
Dartmouth College 1898 | <i>Agency, Iowa</i> 102½ Park st.
Chemistry |
| James Gasherie DeWitt Morrell, PH.B.
Yale University 1900 | <i>Hartford, Conn.</i> 117 Wall st.
Mechanical Engineering |
| Oliver Cromwell Morse, B.A.
Yale University 1868 | <i>Winter Park, Fla.</i> A.
Biblical Literature |
| John Killam Murphy, B.A.
Yale University 1897
PH.B. Yale University 1898 | <i>Branford, Conn.,</i> 99 Audubon st.
Engineering |
| George Hewitt Myers, B.A.
Yale University, 1898 | <i>Washington, D. C.</i> 360 Prospect st.
Botany |
| Rokuro Nakaseko, PH.D.
Johns Hopkins University 1899 | <i>Kyoto, Japan</i> 20 Whalley av.
Physiology and Physiol. Chemistry |
| Robert Wilson Neal, B.A.
Univ. of Kansas 1898 | <i>Lawrence, Kans.</i> 497 Winthrop av.
English |
| Henry James Nichols, B.A.
Yale University 1899 | <i>Binghamton, N. Y.</i> 333 York st.
Physical Science |
| John Pease Norton, B.A.
Yale University 1899 | <i>Los Angeles, Cal.</i> 563 Orange st.
Political and Social Science |
| Hently Shoichi Ohara, B.A.
Leland Stanford Jr. University 1900 | <i>Chibakon, Japan</i> 373 Crown st.
Political and Social Science |

Julius Olsen, B.S. Bethany College 1898	Norway, Kans. 159 Elm st. Mathematical Physics
Clarence Harmon Olson, B.A. Bethany College 1900	Marquette, Kans. 59 Prospect st. English
Herman Max Opitz, B.A. Yale University 1900	Norwich, Conn. 22 Whalley av. German
Rufus Melvin Overlander, B.A. Yale University 1898	New Haven, Conn. 378 Crown st. Economics
Elizabeth Hatch Palmer, B.A. Wellesley College 1887	Ipswich, Mass. 134 Howe st. Classics
Jennie Alice Park, B.S. Mt. Holyoke College 1896	Exeter, Conn. 35 Linwood pl. Mathematics
Mary Isabel Park, B.A. Mt. Holyoke College 1893	Exeter, Conn. Berlin Philosophy
Herbert Parsons, B.A. Yale University 1897	New York City A. History
Walter Melville Patton, B.D. Wesleyan Theo. Coll., Montreal 1891, Ph.D. Heidelberg 1897	New Haven, Conn. 37 Lynwood st. Biblical Literature
Henry Augustus Perkins, B.A. Yale University 1896, B.S. and M.A. Columbia Univ. 1899	Hartford, Conn. 128 Wall st. Mathematics and Physics
Charles Adams Peters, B.S. Boston University 1897	Worcester, Mass. Kent Lab'y Chemistry
Robert Walter Pettit, B.A. Rutgers College 1900	New Brunswick, N. J. 120 York st. Philosophy
Alexander Pratt, Jr., B.A. Trinity College 1898	Bridgeport, Conn. Bridgeport Political and Social Science
Oscar Stoddard Pulman, B.A. Yale University 1900	Albany, N. Y. Kent Lab'y Chemistry
Ernest Martin Quittmeyer, B.A. Wesleyan University 1899	Bridgeport, Conn. Bridgeport Philosophy
Edward Everett Rall, B.A. University of Iowa 1900	New Haven, Conn. 224 Oak pl.
Leo Frederick Rettger, B.A. Indiana University 1896, M.A. 1897	Bloomington, Ind. 118 W. D. Physiology and Physiol. Chemistry
Chauncey Brewster Rice, Ph.D. Yale University 1894	New Haven, Conn. 56 N. S. H. Physics
John Pierrepont Rice, B.A. Yale University 1900	Santa Barbara, Cal. 36 E. D. English and Modern Language

Robert Kilburn Richardson, B.A. Yale University 1898, M.A. Columbia University 1899	New Haven, Conn. 384 Whitney av. History
Julian Ashton Ripley, B.A. Yale University 1898	New York City English A.
Allan Douglas Risteen, B.S. Worcester Polytechnic Institute 1885	Hartford, Conn. Hartford Mathematical Physics
Frederick Oscar Robbins, B.A. Yale University 1896	New Haven, Conn. 341 Winthrop av. Romance Languages
Peter Roberts, B.D. Yale University 1886	Scranton, Pa. 48 E.D. Political and Social Science
Henry Hollister Robinson, PH.B. Yale University 1895	Hartford, Conn. 333 York st. Natural Science
Maurice Henry Robinson, B.L. Dartmouth College 1890, M.A. Dartmouth College 1897	Madelia, Minn. 569 George st. Political and Social Science
Robert Kilburn Root, B.A. Yale University 1898	New Haven, Conn. 58 Grove st. English
Louis Barcroft Runk, B.A. Yale University 1893	Philadelphia, Pa. A. Political and Social Science
William Nelson Runyon, B.A. Yale University 1892	Plainfield, N. J. A. English
William Henry Sallmon, B.A. Yale University 1894, M.A. Yale University 1897	London, Canada 30 E. D. Semitic Languages and Biblical Literature
Charles Edward Sargent, M.A. Bates College 1883	New Haven, Conn. 61 Grove st. Political and Social Science
Edward Christian Schneider, B.S. Tabor College 1897	Shenandoah, Iowa 24 E.D. Physiology and Physiol. Chemistry
Rudolph Schwill, B.A. Yale University 1896	New York City 47 N. S. H. Romance Literature
Charles Otis Scoville, B.A. Yale University 1887	New Haven, Conn. 162 Temple st. Philosophy
Miranda Scoville, PH.B. Cornell College 1894	Grundy Center, Iowa 35 Lynwood st. History
Blanche Burdin Sears, B.A. Bates College 1900	Lewiston, Me. 113 Howe st. English
Martha Hale Shackford, B.A. Wellesley College 1896	Dover, N. H. 37 Howe st. English
Augustus Farnam Shaw, B.A. Yale University 1892	Sao Paulo, Brazil 102½ Park st. Chemistry

Hubert Gibson Shearin, B.A. Center College 1897, M.A. 1899	<i>Dansville, Ky.</i> 347 Orchard st. English
William Kent Shepard, PH.D. Yale University 1900	<i>New Haven, Conn.</i> 57 N. S. H. Mathematics
Susan Smith Sheridan, B.A. University of Omaha 1897	<i>New Haven, Conn.</i> 519 Orange st. English
Barry Congar Smith, B.A. Yale University 1899	<i>New York City</i> A. History
James Robinson Smith, B.A. Yale University 1898	<i>Hartford, Conn.</i> Whitneyville English
Howard Speer, B.A. Yale University 1900	<i>Cincinnati, O.</i> 67 W. D. English
Marius Joseph Spinello, B.A. Yale University 1896, M.A. Yale University 1899	<i>New Haven, Conn.</i> Paris, France Romance Languages
William Howard Sprenkle, B.S. Gettysburg College 1898	<i>Orange, Conn.</i> Orange Physiology
Oscar Emil Staaf, B.A. Bethany College 1900	<i>Lindsborg, Kans.</i> 88 Prospect st. Latin
Frederick Clark Stanley, B.A. Williams College 1893	<i>Bridgeport, Conn.</i> Bridgeport Chemistry
Charles Comfort Starr, PH.B. Yale University 1900	<i>Cornwall, Conn.</i> 191 Sherman av. Chemistry
Constantine Demeter Stephanove, B.A. Yale University 1899	<i>Bansko, Macedonia</i> 266 York st. Philosophy
William Oliver Stevens, B.A. Colby College 1899	<i>Waterville, Me.</i> 139 Dwight st. English
Charles Emerson Stone, PH.B. Yale University 1889	<i>Andover, Mass.</i> A. Romance Languages
Lyman Brumbaugh Stookey, B.A. Yale University 1900	<i>Belleville, Ill.</i> 589 P. Physiology and Physiol. Chemistry
Frederick Lemuel Stottlemeyer, B.A. Bethany College 1900	<i>Beaver Creek, Md.</i> 41 E. D. Greek Philosophy
Henry Daniells Stowe, PH.B. Yale University 1900	<i>Scitico, Conn.</i> 126 High st. Mathematics
Karl Eben Stromquist, B.S. Bethany College 1899	<i>McPherson, Kans.</i> 59 Prospect st. Mathematics
Robert Eccles Swain, B.A. Leland Stanford Jr. University 1898	<i>Palo Alto, Cal.</i> 103 Edgewood av. Physiology and Physiol. Chemistry

Margaret Sweeney, B.A. Radcliffe College 1899	Boston, Mass.	70 Howe st. Physics
Teizaboro Takaheshi Rikikjo College 1897	Tokyo, Japan	40 Lake pl. Social Science
John Frelinghuysen Talmage, B.A. Yale University 1895	New York City	A. English
Leonard Merrige Tarr, B.A. Bates College 1882	New Haven, Conn.	156 Whalley av. Physics
William James Taylor, B.A. University of Nebraska 1891, M.A. University of Nebraska 1897	New Haven, Conn.	133 Dixwell av. Philosophy
Wyatt Warner Taylor, PH.B. Yale University 1900	Stamford, Conn.	22 College st. Mechanical Engineering
John Martin Telleen, B.A. Augustana College 1898	Rock Island, Ill.	149 St. John st. English
Lucy Elizabeth Textor, PH.B. University of Michigan 1894. M.A. Leland Stanford Jr. Univ. 1895	Chicago, Ill.	72 Mansfield st. History
Elbert Nevins Sèbring Thompson, B.A. Yale University 1900	New Haven, Conn.	95 Whalley av. English
Clifford J. Thorn, LL.B. Boston University 1896, M.A. State Univ. of Iowa 1899	Knoxville, Iowa	333 York st. Political and Social Science
Edward Thorstenberg, B.A. Bethany College 1899	Assaria, Kansas	59 Prospect st. German
John Quillin Tilson, B.A. Yale University 1891, M.A. Yale University 1894	Clear Branch, Tenn.	550 P. Political and Social Science
Chauncey Brewster Tinker, B.A. Yale University 1899	Denver, Colo.	36 E. D. English
Cornelia Burton Trowbridge, B.S. Cornell University 1899	West Haven, Conn.	West Haven Biology
Ralph DeForest Tucker, B.A. Yale University 1895	Monson, Mass.	419 Temple st. History
Edson Newton Tuckey, B.A. Hamlin College, 1893	St. Paul, Minn.	16 York sq. Economics
Mabelle Morris Ufford, B.L. Smith College 1899	New Haven, Conn.	57 Grove st. English
Frank Pell Underhill, PH.B. Yale University 1900	Norwalk, Conn.	57 Prospect st. Physiology and Physiol. Chemistry

Homer Krepps Underwood, B.A. Washington and Jefferson Coll. 1899	<i>Washington, Pa.</i> 312 George st. English
Albert William VanBuren, B.A. Yale University 1900	<i>Lynn, Mass.</i> 261 Orange st. Classics
Ralph Gibbs VanName, B.A. Yale University 1899	<i>New Haven, Conn.</i> 121 High st. Chemistry
Charles Philip Wagner, B.A. Yale University 1899	<i>Putnam, Conn.</i> Paris, France Romance Languages
Curtis Howe Walker, B.A. Yale University 1899	<i>New Haven, Conn.</i> 124 W. D. History
Edward Mansfield Walker, PH.B. Yale University 1900	<i>New Haven, Conn.</i> 162 York st. Civil Engineering
J. E. Wallace Wallin, B.A. Augustana College 1897, M.A. Yale University 1899	<i>Stanton, Iowa</i> 97 William st. Philosophy
Arthur Gustavus Ward, B.A. Yale University 1900	<i>Evans Mills, N. Y.</i> 128 High st. German
Charles Milnor Washington, B.A. Yale University 1889	<i>Locust, N. J.</i> 1151 Chapel st. Biology
Halsey Albert Weaver, PH.B. Yale University 1895	<i>Woodstock, Conn.</i> A. Civil Engineering
William Weber, B.D. Yale University 1900	<i>New Haven, Conn.</i> 336 George st. Semitic Languages and Biblical Literature
Moses Cook Welch, B.S. Yale University 1850	<i>Hartford, Conn.</i> Hartford Biblical Literature
Charles Heald Weller, B.A. Yale University 1895	<i>New Haven, Conn.</i> Rome, Italy Classics
Chauncey Wetmore Wells, B.A. Yale University 1806	<i>Middletown, Conn.</i> 203 Lawrence st. English
Philip Patterson Wells, PH.D. Yale University 1900	<i>New Haven, Conn.</i> 72 Mansfield st. History
Sidney Adams Weston, B.A. Yale University 1900	<i>Sharon, Mass.</i> 333 York st. Biblical Literature
John Wesley Wetzels, PH.B. Southwest Kansas College 1894	<i>Lena, Ill.</i> 409 George st. Political and Social Science
Alexander Wheeler, B.A. Yale University 1897	<i>Bridgeport, Conn.</i> Bridgeport English
Lynde Phelps Wheeler, PH.B. Yale University 1894	<i>New Haven, Conn.</i> 333 York st. Physics

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| George Benjamin White, PH.B.
Yale University 1900 | <i>Cooperstown, N. Y.</i> 120 College st.
Physiology and Physiol. Chemistry |
| Paul Whitin, B.A.
Yale University 1898 | <i>Northbridge, Mass.</i> A.
English |
| John Whitmore, PH.D.
Yale University 1892 | <i>New Haven, Conn.</i> 147 Bradley st.
Mathematics |
| Marian Parker Whitney | <i>New Haven, Conn.</i> 227 Church st.
Romance Philology |
| George Reber Wieland, B.S.
Pennsylvania State College 1893,
PH.D. Yale University 1900 | <i>Chester, Pa.</i> M.
Natural Science |
| Arthur Collins Williams, B.A.
Yale University 1900 | <i>Hartford, Conn.</i> Hartford
Biblical Literature |
| John Milton Willis, B.S.
Swarthmore College 1894 | <i>Fowling Creek, Md.</i> 10 Ashmun st.
Chemistry |
| Edwin Bidwell Wilson, B.A.
Harvard University 1899 | <i>Cambridge, Mass.</i> 546 P.
Mathematics |
| Ruth Goulding Wood, B.L.
Smith College 1898 | <i>Pawtucket, R. I.</i> 1193 Chapel st.
Mathematics |
| Alice Lincoln Wright, B.A.
Wellesley College 1897 | <i>New Haven, Conn.</i> 128 York st.
English |
| Henry Burt Wright, B.A.
Yale University 1898 | <i>New Haven, Conn.</i> Dwight Hall
Classics |
| Seiichi Yamaguchi
Doshisha University, Japan, 1896,
M.A. Yale University 1900 | <i>Kyoto, Japan</i> 13 Edgewood av.
Political and Social Science |
| Masajiro Yokoyama
Doshisha University, Japan, 1896 | <i>Okayama, Japan</i> 90 W. D.
Political and Social Science |
| Tokumatsu Yonemura, B.E.
Caldwell College 1900 | <i>Kumamoto, Japan</i> 6 Trumbull st.
Economics |
| George Zahm, LL.B.
Yale University 1900 | <i>Syracuse, N. Y.</i> 276 Elm st.
Economics |

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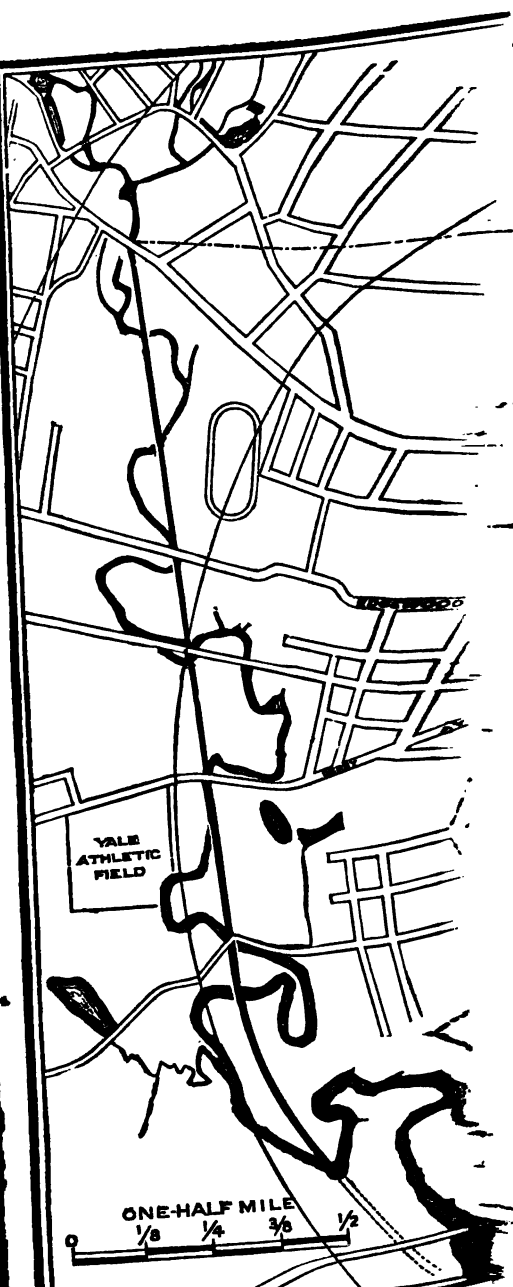
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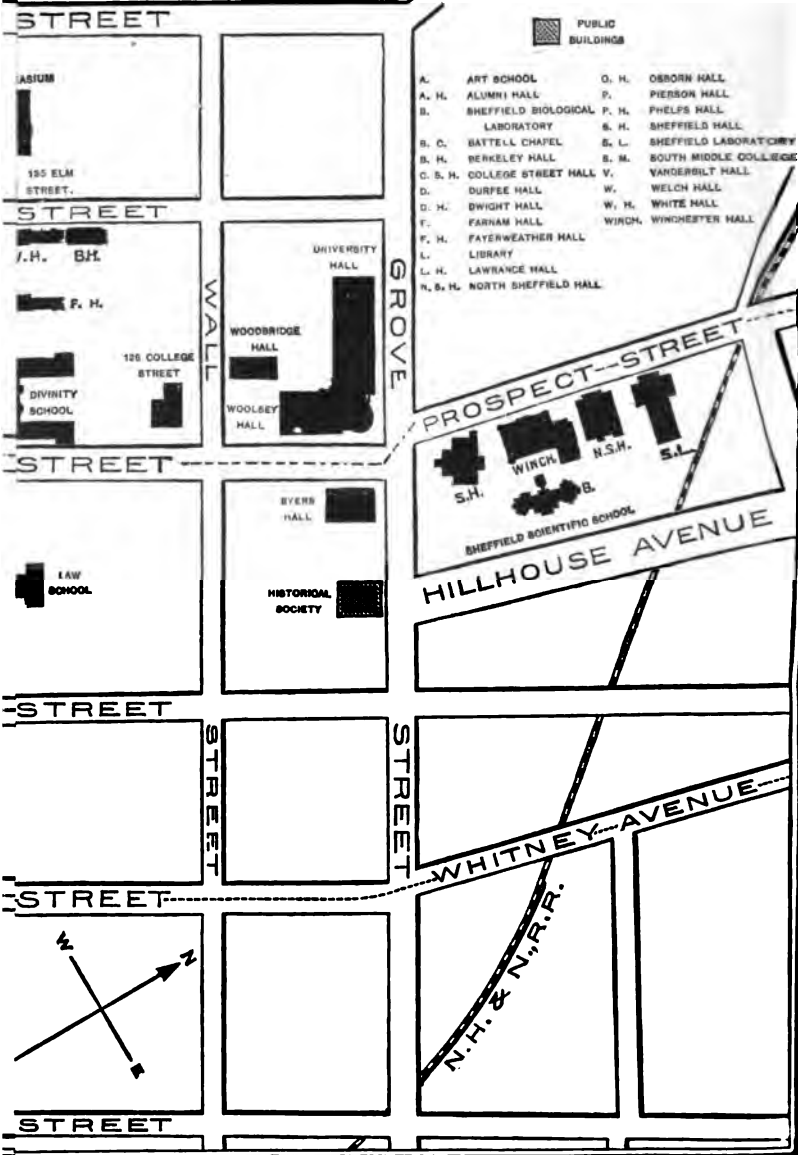
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ABBREVIATIONS



- | | |
|------------------------------------|----------------------------|
| A. ART SCHOOL | O. H. OSBORN HALL |
| A. H. ALUMNI HALL | P. PIERSOON HALL |
| B. SHEFFIELD BIOLOGICAL LABORATORY | P. H. PHELPS HALL |
| B. C. BATTELL CHAPEL | S. H. SHEFFIELD HALL |
| B. H. BERKELEY HALL | S. L. SHEFFIELD LABORATORY |
| C. S. H. COLLEGE STREET HALL | S. M. SOUTH MIDDLE COLLEGE |
| D. DURFEE HALL | V. VANDERBILT HALL |
| D. H. DWIGHT HALL | W. WELCH HALL |
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| F. H. FAYERWEATHER HALL | WINCH. WINCHESTER HALL |
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FOR

1902-1903



NEW HAVEN:

1902

CALENDAR

1902

- 25 Sept. Thursday FIRST TERM begins.
26 Nov. Wednesday THANKSGIVING RECESS begins, 1.20 P. M.
28 Nov. Friday RECESS ends, 8 A. M.
17 Dec. Wednesday FIRST TERM ends.

Winter Vacation

1903

- 7 Jan. Wednesday SECOND TERM begins.
8 April Wednesday SPRING RECESS begins, 1.20 P. M.
16 April Thursday RECESS ends, 8 A. M.
21 June Sunday Baccalaureate Sermon.
24 June Wednesday COMMENCEMENT.

Summer Vacation

- 24 Sept. Thursday FIRST TERM begins.
16 Dec. Wednesday FIRST TERM ends.
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For information with regard to the Graduate School, not contained in this pamphlet, and also with regard to Fellowships and Scholarships (see page 13), address the Dean,

Professor ANDREW W. PHILLIPS.

GRADUATE SCHOOL

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JOHN HENRY NIEMEYER, M.A., *Professor of Drawing*

TRACY PECK, M.A., *Professor of Latin*

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THOMAS DAY SEYMOUR, LL.D., *Professor of Greek*

- CHARLES SHELDON HASTINGS, PH.D., *Professor of Physics*
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SAMUEL SIMONS SANFORD, M.A., *Professor of Applied Music*
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EDWARD PARMELEE MORRIS, M.A., *Professor of Latin*
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CHARLES EMERSON BEECHER, PH.D., *Professor of Historical Geology*
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WILLIAM LYON PHELPS, PH.D., *Professor of English Literature*
ROBERT NELSON CORWIN, PH.D., *Professor of German*
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HENRY SOLON GRAVES, M.A., *Professor of Forestry*
HENRY CROSBY EMERY, PH.D., *Professor of Political Economy*

OTHER INSTRUCTORS

JOHN CHESTER ADAMS, B.A., *Tutor in English*
WILLIAM GILBERT ANDERSON, M.D., *Associate Director of the Gym-
nasium*
Rev. BENJAMIN WISNER BACON, LITT.D., D.D., *Professor of New
Testament Greek*
WILLIAM BACON BAILEY, PH.D., *Instructor in Statistics*
ERNEST HICKOK BALDWIN, PH.D., *Lecturer in History*
SAMUEL EBEN BARNEY, C.E., *Assistant Professor of Civil Engineering*
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THE TUTTLE, MOREHOUSE & TAYLOR PRESS, NEW HAVEN, CONN.



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Scale, 1 in = 400 ft.

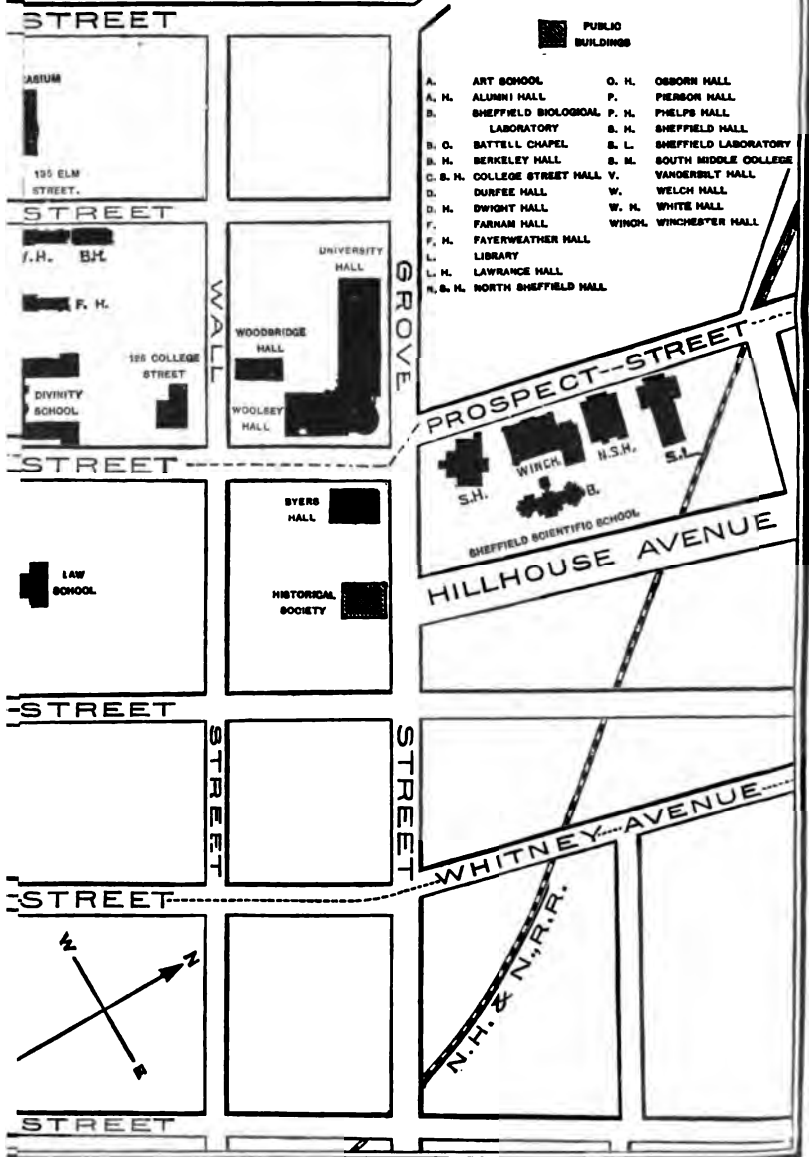


ABBREVIATIONS

UNIVERSITY BUILDINGS

PUBLIC BUILDINGS

A.	ART SCHOOL	O. H.	OSBORN HALL
A. H.	ALUMNI HALL	P.	PIERSON HALL
B.	SHEFFIELD BIOLOGICAL LABORATORY	P. H.	PHELPS HALL
B. O.	BATTELL CHAPEL	S. H.	SHEFFIELD HALL
B. M.	BERKELEY HALL	S. L.	SHEFFIELD LABORATORY
C. S. H.	COLLEGE STREET HALL	S. M.	SOUTH MIDDLE COLLEGE
D.	DURFEE HALL	V.	VANDERBILT HALL
D. H.	DWIGHT HALL	W.	WELCH HALL
F.	FARNHAM HALL	W. M.	WHITE HALL
F. H.	FAYERWEATHER HALL	WINCH.	WINCHESTER HALL
L.	LIBRARY		
L. H.	LAWRANCE HALL		
N. & H.	NORTH SHEFFIELD HALL		



GRADUATE SCHOOL
OF
YALE UNIVERSITY

COURSES OF INSTRUCTION

FOR

1902-1903



NEW HAVEN:

1902

CALENDAR

1902

25 Sept.	Thursday	FIRST TERM begins.
26 Nov.	Wednesday	THANKSGIVING RECESS begins, 1.20 P. M.
28 Nov.	Friday	RECESS ends, 8 A. M.
17 Dec.	Wednesday	FIRST TERM ends.

Winter Vacation

1903

7 Jan.	Wednesday	SECOND TERM begins.
8 April	Wednesday	SPRING RECESS begins, 1.20 P. M.
16 April	Thursday	RECESS ends, 8 A. M.
21 June	Sunday	Baccalaureate Sermon.
24 June	Wednesday	COMMENCEMENT.

Summer Vacation

24 Sept.	Thursday	FIRST TERM begins.
16 Dec.	Wednesday	FIRST TERM ends.

For information with regard to the Graduate School, not contained in this pamphlet, and also with regard to Fellowships and Scholarships (see page 13), address the Dean,

Professor ANDREW W. PHILLIPS.

GRADUATE SCHOOL

FACULTY

ARTHUR TWINING HADLEY, LL.D., PRESIDENT

ANDREW WHEELER PHILLIPS, PH.D., *Dean, and Professor of Mathematics*

WILLIAM HENRY BREWER, PH.D., *Professor of Agriculture*

ARTHUR MARTIN WHEELER, LL.D., *Professor of History*

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THOMAS RAYNESFORD LOUNSBURY, LL.D., L.H.D., *Professor of English*

EUGENE LAMB RICHARDS, M.A., *Professor of Mathematics*

JOHN HENRY NIEMEYER, M.A., *Professor of Drawing*

TRACY PECK, M.A., *Professor of Latin*

ADDISON EMORY VERRILL, M.A., *Professor of Zoology*

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EDWIN BIDWELL WILSON, PH.D., *Instructor in Mathematics*

ADMINISTRATIVE COMMITTEE,

WITH CONSULTATION HOURS

ARTHUR TWINING HADLEY, LL.D., PRESIDENT,

Woodbridge Hall, daily, 8.30 A. M. to 1 P. M.

ANDREW WHEELER PHILLIPS, PH.D., DEAN, and *Professor of Mathematics*, 90 High street, daily, except Saturday, 10.30 A. M. to 12 M.

ARTHUR MARTIN WHEELER, LL.D., *Professor of History*,

C, Osborn Hall, Monday, Tuesday, Thursday, and Friday,
11 A. M.

CHARLES BRINCKERHOFF RICHARDS, M.A., *Professor of Mechanical Engineering*, 112 Winchester Hall, Tuesday and Friday,
10.30 A. M.

Rev. GEORGE TRUMBULL LADD, D.D., LL.D., *Professor of Philosophy*,
275 Lawrance Hall, Monday and Thursday, 12 M.

THOMAS DAY SEYMOUR, LL.D., *Professor of Greek*,
22 Phelps Hall, daily, 12.30 to 1 P. M.

ALBERT STANBURROUGH COOK, PH.D., L.H.D., *Professor of English*,
219 Bishop street, Monday and Thursday, 1.30 P. M.

HENRY WALCOTT FARNAM, R.P.D., *Professor of Political Economy*,
43 Hillhouse av., daily, except Saturday, 2 to 3 P. M.

RUSSELL HENRY CHITTENDEN, PH.D., *Professor of Physiological Chemistry, and Director of the Sheffield Scientific School*, 3 Sheffield Hall,
daily, except Friday, 10 A. M. to 12 M.

FRANK KNIGHT SANDERS, PH.D., D.D., *Professor of Biblical History and Archaeology, and Dean of the Divinity School*, 615 East Divinity Hall, daily, 9.30 A. M. to 12 M.

GENERAL STATEMENT

ORGANIZATION

The Graduate School of Yale University is a section of the Department of Philosophy and the Arts, which was first formally organized in 1847 for scientific and graduate instruction, but now includes Yale College, the Sheffield Scientific School, the School of the Fine Arts, the Department of Music, and the Forest School.

The degrees of Doctor of Philosophy and Civil Engineer were first offered in 1860, the degree of Dynamical or Mechanical Engineer in 1873, that of Master of Arts (previously given without evidence of study) in 1874, and that of Master of Science in 1897.

The professors in the several sections of the Department of Philosophy and the Arts together constitute the Faculty of the Graduate School. The general oversight of graduate instruction and graduate students is entrusted to the Dean and the Administrative Committee, who may be called upon for information and advice. Students are expected to report to the Dean soon after reaching New Haven.

ADMISSION AND REGISTRATION

Graduates of this and other Colleges and Universities, and (in exceptional cases, by special permission) other persons of liberal education, who are at least eighteen years old, are received as students for longer or shorter periods, with or without reference to the attainment of a degree.

All graduate students who are not regularly enrolled in any other department of the University are required to register their names at the office of the Dean at the beginning of each year of study.

The degree of Doctor of Philosophy, with the courses of the Graduate School leading thereto, is open to candidates without distinction of sex.

FEEES AND EXPENSES

The fee for instruction is generally one hundred dollars per year; but it may be more, or less, according to the courses pursued and the amount of instruction received.

A special fee of five dollars is charged to those who use the Gymnasium, and one of two dollars to those admitted to the use of the College Reading-room.

Board is obtained at prices varying from three and a half to eight dollars a week. The average price is under five dollars.

A list of suitable rooms is kept at the Dean's office.

INSTRUCTION

Courses of study are offered in the following departments:

- I. PSYCHOLOGY, ETHICS, AND PHILOSOPHY.
- II. ECONOMICS, SOCIAL SCIENCES, HISTORY, AND LAW.
- III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.
- IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY.
- V. MODERN LANGUAGES AND LITERATURES.
- VI. NATURAL AND PHYSICAL SCIENCE.
- VII. MATHEMATICS.
- VIII. THE FINE ARTS.
- IX. MUSIC.
- X. PHYSICAL EDUCATION.

Instruction is given partly by lectures, partly in recitations and by oral and written discussions, partly by directing courses of reading, and partly by the direction of work in the laboratories and with instruments.

The attention of teachers who desire to fit themselves more thoroughly for a higher grade of professional work is called to the advantages offered by this department for pedagogical instruction and discipline. In addition to the special and advanced study of the subjects in which the graduate student desires instruction, and the pursuit of

courses in psychology, ethics, philosophy, and of other courses cognate with pedagogy, opportunity is afforded to observe the actual practice in the class-room, as well as the organization of the different departments of the University and their methods of work.

DEGREES

The DEGREE OF DOCTOR OF PHILOSOPHY is conferred upon those students who show the results of resident graduate work by a thesis giving evidence of high attainment and power of investigation, and by an examination on studies whose grade and amount meet the approval of the Faculty. Under ordinary circumstances two or more years' work in residence will be required, but in exceptional cases work of equal grade at another University may take the place of a year's residence here. The thesis must be deposited at the Library for public inspection, not later than May 1. A good knowledge of Latin, German, and French is required in all cases, unless, for some very exceptional reasons, the candidate be excused by the Faculty. Evidence of sufficient attainments in these languages must be furnished the Dean at least two years before the degree is given. The fee for instruction is one hundred dollars per year. The fee for graduation is ten dollars.

The DEGREE OF MASTER OF ARTS is conferred on Bachelors of Arts of Yale College (and on Bachelors of Arts of other colleges whose course of study is equivalent to that of Yale College), who have given to the College Faculty evidence of satisfactory progress in liberal studies after receiving their first degree. Such evidence may be furnished by one year's systematic study (not professional) in New Haven, under the direction of the College Faculty, followed by an examination. Grad-

uates of other colleges can obtain the degree only by residence as thus described. The charge for instruction is usually one hundred dollars per year, with a fee of ten dollars for the degree.

Such Bachelors of Arts of *Yale College* as may not choose to reside at the College for study may at any time not less than three years after graduation, show, in either of the two following ways, that they have spent a year in liberal (and non-professional) study, and are worthy of recommendation for this degree. (1) Such candidates may apply to the Faculty for the designation of a course of study, on which an examination shall be taken. This application must be accompanied by a fee of twenty-five dollars. (2) Or a candidate may submit as evidence of his fitness for this degree a printed essay, for the examination of which a fee of twenty-five dollars (to be paid in advance) is required. An additional fee of ten dollars will be charged in all cases for the degree.

A committee of the Faculty is appointed (consisting for the present year of Professors Wheeler and Phillips), to whom candidates for this degree must submit their proposed courses of study for approval by the end of October in each year; and the evidence of a year's study must be submitted to the same committee by June 1.

The DEGREE OF MASTER OF SCIENCE is conferred on graduates of this or other universities, of two years' standing or upwards, who have taken their first degree in science and who pursue successfully a higher course of study in science under the direction of the Governing Board of the Sheffield Scientific School. Such a course involves at least one year of resident graduate study, followed by an examination and presentation of a satisfactory thesis in some department of science. A committee of the Faculty is appointed, to whom candidates for this degree must submit their proposed courses of study for approval before the end of October of each year.

The DEGREES OF CIVIL ENGINEER AND OF MECHANICAL ENGINEER are conferred on Bachelors of Philosophy who have taken the first degree in Engineering study, and who pursue a higher course under the direction of the Governing Board of the Sheffield Scientific School for at least two years, sustaining a final examination, and giving evidence of their ability to design important constructions and to make the requisite drawings and calculations. The fee for graduation is five dollars.

FELLOWSHIPS

FIVE FELLOWSHIPS yielding four hundred dollars each, not exempting the holders from charges for tuition, are open to graduates of all colleges; but preference is given to those who have already spent at least one year in graduate study, and have shown capacity for original work.

The BULKLEY FELLOWSHIP IN AMERICAN HISTORY was established in 1901 by the gift of ten thousand dollars from Mr. Jonathan Bulkley, of the class of 1879, and other members of his family, in memory of Helena Perry Bulkley. The income, four hundred dollars, is awarded annually to a student of high character and marked ability, who will pursue graduate studies in American History or Administration under the direction of the Professors of History.

The HENRY C. ROBINSON FELLOWSHIP was founded in 1900 in the name of Mrs. Mary Robinson Cheney, of Hartford, Conn., and her sister, Miss Eliza Robinson, in memory of their uncle, Henry C. Robinson, of the class of 1853, by the gift of five thousand dollars. The income is awarded annually to a student of the Graduate School, selected on the ground of ability and attainments.

The JOHN ADDISON PORTER MEMORIAL FELLOWSHIP was established in 1901 by Mrs. Josephine S. Porter, in memory of her husband, Professor John Addison Porter, of the

class of 1842, and of her son, John Addison Porter, of the class of 1878, by the gift of ten thousand dollars. The income is awarded annually to a graduate of the Academic Department or of the Sheffield Scientific School, selected for distinguished excellence and promise in the Department of English.

The CLASS OF '90 FELLOWSHIP, yielding one hundred and fifty dollars, is awarded to a student who has shown ability to do research-work.

The YALE ALUMNI ASSOCIATION OF CALIFORNIA FELLOWSHIP of three hundred dollars is given to a graduate of one of the California Universities, pursuing studies at Yale in the Graduate School. The incumbent is selected by the Association.

The following Fellowships are, by the terms of the donations, open only to graduates of Yale College.

The DOUGLAS FELLOWSHIP.

The SOLDIERS' MEMORIAL FELLOWSHIP.

The SILLIMAN FELLOWSHIP.

The JOHN SLOANE FELLOWSHIP.

The SCOTT HURTT FELLOWSHIP.

The ELLEN BATTELL ELDRIDGE FELLOWSHIPS (two).

The MACY FELLOWSHIP.

The LARNED FELLOWSHIPS (three).

The FOOTE FELLOWSHIPS (three).

The CUYLER FELLOWSHIP.

SCHOLARSHIPS

TWENTY SCHOLARSHIPS, yielding one hundred dollars each, are open to graduates of all colleges.

The following Scholarships are open only to graduates of Yale College.

The CLARK SCHOLARSHIPS, and

The W. W. DE FOREST SCHOLARSHIP.

The DANIEL C. EATON GRADUATE SCHOLARSHIP IN BOTANY is endowed with the income of a fund of two thou-

sand dollars given by Mrs. Eaton in commemoration of her husband, the late Professor Daniel C. Eaton. This scholarship will be open for competition to members of the Senior classes in the Academical and Scientific departments, on conditions to be prescribed by the Governing Board of the Sheffield Scientific School.

SIX SHEFFIELD SCHOLARSHIPS of \$100 each (covering the charges for tuition) are awarded, on application, to those members of the graduating class of the Sheffield Scientific School who have attained high proficiency in the special studies of their respective courses, and who desire to spend one or more years in graduate study in the School. Each scholarship will be available for one year only. Application for these scholarships must be made in writing on or before June 1st to the head of the department to which the student belongs, with a statement as to the character of the graduate study to be pursued.

Candidates for appointment to Fellowships and Scholarships should send their applications, accompanied by letters of recommendation and other evidence of the excellence of their work already accomplished, to the Dean, Professor Andrew W. Phillips, not later than April 15.

The ARTHUR TWINING HADLEY SCHOLARSHIP yields an income of \$225 a year, which sum is awarded annually to one or more students of the University, to assist in the publication of meritorious theses or other results of investigation.

PRIZES

The JOHN A. PORTER PRIZE, being the income of five thousand dollars, is offered for the best English Essay on a prescribed subject. Competing essays must be handed in after the close of the Spring Recess, and the award will be announced on Commencement Day. Any person who has been pursuing a regular course for a degree in any Department during the whole of the current College year, may compete for this prize. If none of the competing essays is of sufficient merit, the prize will not be awarded.

The subjects for Essays in 1902 are as follows :—

1. The Reaction of India upon English Thought and Life.
2. Reconstruction and Disfranchisement in the South.
3. American Diplomacy.
4. The Doctrine that All Governments Derive Their Just Powers from the Consent of the Governed, Considered from the Standpoint of History and Political Philosophy.
5. The Reappearance, in the Insular Cases, of the Theory that the United States are a Confederacy.
6. Emperor William II and the Commercial Development of Germany.
7. Ralph Waldo Emerson.
8. Russian Fiction.
9. Greek Philosophy in Medieval Scholasticism.

The COOK PRIZE IN POETRY, of the value of fifty dollars, is offered by Professor Cook for the best unpublished poem. Competition is open to students of the University in all departments. If none of the competing poems is of sufficient merit, the prize will not be awarded. The poems, each of which should be signed by an assumed name, and accompanied by a sealed envelope containing the writer's full name, will be due on April 1, and may be handed in at the Chittenden Library.

The JACOB COOPER PRIZE IN GREEK PHILOSOPHY, established by the gift of five hundred dollars from Professor

Cook, is awarded in any year by the departments of Greek and Philosophy to such student of the University, being a person of high attainments and ability, as shall pass the best examination in the *Metaphysics* and *Organon* of Aristotle and shall submit the best thesis upon some topic drawn from one of these works and announced publicly at a convenient time in advance.

The GEORGE WASHINGTON EGGLESTON HISTORICAL PRIZE, of the income of six hundred dollars, will be awarded to any student of the University who shall during the ensuing year, by research, discover any new fact or facts relating to American History; or shall from existing data bring to bear any information, or criticism, sufficiently notable to be useful from a literary point of view.

COURSES OF INSTRUCTION

Courses marked with an asterisk (*) are undergraduate courses; they are open to graduate students who have the consent of the instructor and the approval of the Faculty.

The number of hours stated means, when not otherwise specified, hours of exercise, lectures, or recitations, each week through the year.

For UNIVERSITY PRIVILEGES, including information respecting RESEARCH CLUBS, LIBRARIES, LECTURES, CONCERTS, etc., see pages 130-135.

COURSES OF INSTRUCTION

I. PHILOSOPHY

GEORGE T. LADD, D.D., LL.D.	GEORGE B. STEVENS, Ph.D., D.D.
E. WASHBURN HOPKINS, Ph.D.	GEORGE M. DUNCAN, LL.D.
E. HERSHEY SNEATH, Ph.D.	EDWARD W. SCRIPTURE, Ph.D.
CHARLES H. JUDD, Ph.D.	WILLIAM CHURCHILL, Ph.D.
HENRY DAVIES, Ph.D.	THOMAS C. STEARNS, Ph.D.
STUART H. ROWE, Ph.D.	CLOYD N. McALLISTER, Ph.D.
GEORGE R. MONTGOMERY, Ph.D.	WILLIAM M. HESS, Ph.D.
WILLIAM J. TAYLOR, Ph.D.	

COURSES IN THIS DEPARTMENT are offered in Introduction to Philosophy, Psychology, Logic and Epistemology, Ethics, Aesthetics, Metaphysics, Philosophy of Religion, Pedagogics, History of Philosophy, and Philosophical Criticism.

For COGNATE COURSES, of especial value to students in this Department, in Physiology, Histology and Biology, see course VI, 61 f.; in Anthropology and Social Science, see course II, 1 f.; in Evolution, see courses II, 36, and VI, 55, 59; in Chemical Theory, see course VI, 29; and in Plato, see courses IV, 7 and 16.

The PHILOSOPHICAL SEMINARY ROOM, 4 Herrick Hall, is fitted up for the use of graduate students in Philosophy. It contains the Departmental Library, and may be utilized for purposes of study at all times. Keys are furnished on application to Professor Ladd to all graduate students taking courses in the department.

The HEALY PHILOSOPHICAL LIBRARY, founded by a gift of \$10,000 from Mrs. Susie Healy Camp, of Hartford, as a memorial of her father, William Arnold Healy, is a departmental library for the Department of Philosophy. It is placed in the Philosophical Seminary room, and consists of 1200 volumes, to which additions are constantly being made, besides the current philosophical and psychological

periodicals. It aims to afford all the advantages of a well-selected consulting library for the students of philosophy.

The PSYCHOLOGICAL LABORATORY of the Department is thoroughly equipped for both instruction and original research. In addition to the provisions for work in experimental psychology, there are sections for experimental pedagogy and experimental phonetics. Each student pursuing investigations is assigned a desk and an allotment of space and apparatus. An annual publication, the *Studies from the Yale Psychological Laboratory*, the eighth volume of which has just been issued, contains the results of all researches carried on in the laboratory.

The PHILOSOPHICAL CLUB, composed of the instructors in the Department and all graduate students who take courses in philosophy, holds regular meetings fortnightly, on Tuesday evening. It is designed to afford opportunity both for the presentation and discussion of the results of original research by its members, and also for hearing addresses and papers from distinguished authorities on philosophical subjects, who are not connected with the Department as teachers. Addresses have been delivered before the Club by Professors Lloyd Morgan, John Watson, W. T. Harris, J. G. Schurman, William James, J. McKeen Cattell, Josiah Royce, Borden P. Bowne, James H. Hyslop, William Caldwell, and others.

INTRODUCTION TO PHILOSOPHY

Professor LADD and Dr. HESS:—

*I *Introduction to Philosophy.*

3 hrs.

This course is designed to present, in an elementary and summary way, the principal philosophical problems. It may be taken by those whose special studies lie in other departments and as a means of general culture. It is recommended to all who desire to specialize in this department and have not already had its equivalent.

During the latter half of the course special emphasis is laid upon the philosophy of life and of conduct, in connection with

the discussion of problems in Ethics, Aesthetics, and the Philosophy of Religion.

Two of the hours will consist chiefly of lectures, and the third hour of papers and discussions by the class.

[Tuesday, 4.00 P. M., and Thursday, 4.00–6.00 P. M., B₁ O.]

Professor DUNCAN :—

[2 *Encyclopaedia of Philosophy.*

A series of informal lectures on the study of philosophy, and the literature of its various branches.

Omitted in 1902–1903.]

PSYCHOLOGY

Professor LADD :—

3 *Psychological Theory.* 2 hrs.

The principal topics of psychology will be discussed with a view to the formation of an intelligent and comprehensive theory of the Mind's nature and development. Among these topics especial attention will be given to the following: the nature and method of psychology; the doctrine of faculties, and the primary laws of attention, association, memory, and reasoning; the constitution of the Mind and the laws of its evolution; the relations of body and mind; and, finally, the problems offered by the reality, unity, and self-identity of conscious mental life, and the conception of personality arising therefrom. The exercises will consist, in general, of a lecture, to be followed by papers and discussions by the class.

[Monday, 7.15–9.00 P. M., 4 Herrick Hall.]

[4 *Abnormal Psychology.* 1 hr.

This course of lectures discusses the phenomena of illusions and hallucinations, the physiological changes and mental states in sleep, and in hypnotic, somnambulistic, and other allied conditions. The theory of illusions and hallucinations is discussed in detail.

Omitted in 1902–1903.]

Assistant Professor SCRIPTURE :—

*5 *Psychology (Physiological and Experimental).* 2 hrs.

A general course illustrated by physiological and psychological experiments. Text-books: Ladd's *Outlines of Physiological Psychology*; Scripture's *The New Psychology*.

[Tuesday and Thursday, 2.00 P. M., 2 H. H.]

*6 *Psychology (Elementary Laboratory Course).* 3 hrs.

A series of elementary exercises performed by the student in connection with the chief topics of course 5. The exercises will include experiments on attention, practice, fatigue, emotion, memory, volition, rhythm, time of thought, hearing, color-vision, etc.

[Friday, 3.00-6.00 P. M., 3 H. H.]

Assistant Professor SCRIPTURE and Dr. McALLISTER :—

7 *Psychology (Advanced Laboratory Course).* 3 hrs.

A series of exercises in experimental psychology to be performed by the student, affording a practical training in laboratory-manipulation. Text-book : Scripture's *Elementary Course in Psychological Measurements*.

[Monday, 3.00-6.00 P. M., 3 H. H.]

Assistant Professor SCRIPTURE :—

8 *Psychology (Research).* 4 hrs.

Students of psychology who have taken or are taking courses 5 and 6 may take part in investigations. Those who have taken or are taking course 7 also and have shown the necessary qualifications of an investigator are permitted to undertake independent investigations. Special arrangements are made for candidates for the degree of Doctor of Philosophy. The results of all investigations belong to the archives of the laboratory. Those who undertake investigations thereby agree to prepare the results for publication, subject to approval, in the *Studies from the Yale Psychological Laboratory*.

9 *Psychology (Technical Course).* 1 hr.

This course consists of a series of exercises for those who expect to teach experimental psychology and to manage a laboratory. The instruction covers: the principles involved in making, repairing, and caring for apparatus, with practical training in wood and metal work; the methods of experimental demonstration, with practice in the preparation of lantern slides and the use of lime-light and electric lanterns; the principles of laboratory economy, etc. The workshop practice will be cared for by a special instructor. The student is expected to make several pieces of apparatus involving the use of the lathe and the various small tools. He is urged to become sufficiently familiar with apparatus and lantern-work to give successfully an illustrated lecture; practice lectures will be held and subjected to criticism.

10 *Experimental Phonetics.* 1 hr. [or 2 hrs.]

Lectures, laboratory exercises and readings in the application of experimental methods to the study of language, song, rhythm and verse, including a careful study of the action of the vocal organs in producing English, German and French sounds and of the acoustic nature of these sounds as determined by recent investigations. This course is especially recommended to students of the languages and vocal music. [An extra hour of practical exercises in the use of phonetic apparatus and methods is offered to those taking this course.] Text-book : Scripture's *Elements to Experimental Phonetics*.

(See also course 58, IV, in Phonetics by Professor Oertel.)

[Monday, 10.30 A. M., 2 H. H.]

11 *Experimental Phonetics (Research).*

Properly qualified students of any department who wish to use the laboratory's apparatus for research may make special arrangements. The laboratory possesses all the standard apparatus of experimental phonetics and two machines for tracing off speech records. The large collection of unstudied tracings of song and speech, of prose and verse, and of instrumental music may be used by students preparing theses in phonetics, modern languages, vocal music and acoustics.

Dr. JUDD :—

*12 *Elements of Psychology.* 2 hrs.

A course of systematic instruction in the elements of general psychology, from the modern scientific standpoint. Text-book and lectures.

[Tuesday and Thursday, 8.30 A. M., 2 H. H.]

13 *Genetic Psychology.* 1 hr.

A course of lectures on the methods and results of psychological study of animals, primitive races and children. The aim of this comparative study is the discovery of general principles of mental development.

[Tuesday, 11.30 A. M., B. O.]

For other courses dealing with Psychology, see courses 14, 15, 20, 25, 35, 46 and 48.

ETHICS

Professor LADD :—

- *14 *Elements of Ethics.* 1 hr.

A course of expository lectures, with required readings, on the elements of ethics, theoretical and applied. The lectures will treat especially the nature of man as fitted for conduct, the classification and nature of the virtues, the development of opinion on moral questions, and the history of the formation of moral ideals. Paulsen's *A System of Ethics* will be used as required reading.

[Saturday, 10.30 A. M., B₁ O.]

Professor SNEATH :—

- 15 *Systematic Ethics.* 2 hrs.

A study of the main problems of the philosophy of conduct—the nature of the moral self, the freedom of the will, the nature and grounds of moral relations, etc. Portions of the following works will be studied: Sidgwick's *Methods of Ethics*, Mill's *Utilitarianism*, Martineau's *Idiopsychological Ethics*, Paulsen's *A System of Ethics*, and Ladd's *The Philosophy of Conduct*.

[Thursday, 2.30-4.00 P. M., A₂ O.]

- [16 *History of Modern Ethics.* 2 hrs.

An historical and critical study of modern ethical theories from Hobbes to the present time. The course will deal primarily with British ethics. However, German ethics from Kant to Schopenhauer will be carefully considered. Lectures and elaborate papers.

Omitted in 1902-1903.]

- 17 *Ethical Seminary.* 2 hrs.

Research work along specific ethical lines will constitute the work of the seminary, the subjects varying from year to year. For the year 1902-1903 the subject of investigation will be the doctrine of the freedom of the will in pre-Kantian Modern Philosophy.

[Tuesday, 2.30-4.00 P. M., A₂ O.]

- 18 *Modern Political Philosophy.* 2 hrs.

A study of the development of reflective thought in Modern Philosophy on the questions of the origin, nature, functions,

forms, and ends of civil government. The following works will be read: Hobbes' *Leviathan*; Spinoza's *Tractatus Politicus*; Locke's *Essays on Civil Government*; Rousseau's *Social Contract*; Bentham's *Fragment of Government*; and Hegel's *Philosophy of Right*.

[Monday, 2.30-4.00 P. M., A₂ O.]

For other courses dealing with Ethics, see courses 1, 45*b*, 46 and 48.

LOGIC AND EPISTEMOLOGY

Professor DUNCAN and Dr. CHURCHILL:—

*19 *Elements of Logic and Epistemology.* 2 hrs.

A course of systematic instruction in the elements of logic, deductive and inductive, with especial attention to the nature of reasoning, the conditions of proof, and the principles of science; together with a brief course in epistemology, dealing with the nature, origin, validity, and extent of knowledge, and including an examination of 'phenomenalism,' 'the relativity of knowledge,' and other current forms of agnosticism.

[Wednesday and Friday, 8.30 A. M., B₁ O.]

Professor DUNCAN:—

20 *Epistemology.* 2 hrs.

The nature and conditions of formal truth will be studied in connection with the reading of an advanced work on logic, such as Hobhouse's *Theory of Knowledge*. This will be followed by a study of the psychology of knowledge and by an examination of the nature, limits, and grounds for the validity of our knowledge of reality. Professor Ladd's *Philosophy of Knowledge* will be read in connection with the latter part of the course.

[Friday, 8.30-10.00 A. M., B₁ O.]

[21 *Philosophical Scepticism.* 2 hrs.

An historical and critical examination of scepticism as revealed in the history of speculative thought, with especial reference to the determination of the causes, grounds, and limits of scepticism, and the construction of a valid theory of knowledge. The course will include a study of the scepticism of the Sophists; the Earlier and Later Pyrrhonists; the Middle and New Acad-

emies ; the scepticism of Augustine and Descartes ; of Hume and Kant ; the positivism of Comte, Mill, and Lewes ; the relativism of Hamilton and Mansel ; and the agnosticism of Spencer, etc. Particular attention will be given to sensationalism and error.

Omitted in 1902-1903.]

Dr. JUDD :—

22 *Scientific Method.*

1 hr.

A course in the methods of the sciences with especial reference to the assumptions and criteria of inductive reasoning.

[Monday, 11.30 A. M., B₁ O.]

For other courses dealing with Epistemology, see courses 1, 39, 45*a* and 46.

AESTHETICS

Dr. DAVIES :—

23 *Aesthetics.*

1 hr.

The object of this course is to review the history of thought on the subject of the beautiful ; to give a philosophical account of the foundations upon which the arts rest ; and to study scientific theory of art in its relation to general philosophical system. Bosanquet's *History of Aesthetics*, Rutgers Marshall's *Pain, Pleasure, and Aesthetics*, and other works, are read in connection with the course.

[Monday, 5.00 P. M., B₁ O.]

For other courses dealing with Aesthetics, see courses 1 and 48.

METAPHYSICS

Professor LADD :—

[24 *Systematic Metaphysics.*

2 hrs.

The principal metaphysical conceptions—such as Space, Time, Causation, Number, Substance, Quality, Relation, etc.—will be thoroughly discussed ; and the attempt will be made to unite them in a harmonious view of the physical world and of human

life. This will involve a careful study of such themes as Matter and Spirit, Change and Development, the Absolute and the Relative, and God and the World. Most of the work will be research, to be done by the class and presented in the form of elaborate papers for criticism and discussion.

Omitted in 1902-1903.]

Dr. JUDD :—

25 *Philosophy of Mind.* 2 hrs.

Beginning with the facts and laws established by empirical psychology, this course aims at the construction of a metaphysic of mind. The following are some of the subjects to be treated: The concept of mind; the reality, nature, genesis, and destiny of mind; the relations of mind and body; materialistic objections, etc. The course will be based on Ladd's *Philosophy of Mind*.

[Thursday, 11.30 A. M.—1.00 P. M., B₁ O.]

Dr. CHURCHILL :—

26 *Philosophy of Nature.* 2 hrs.

In this course the general relations of philosophy to the physical and natural sciences will be considered; and the history of the development of the principal conceptions of these sciences will be briefly traced. An attempt will also be made to estimate critically the meaning and value of these same conceptions from the standpoint of philosophy. Especial attention will be given to the discussions of Karl Pearson and Ostwald, and, toward the end of the course, to the bearing of the modern doctrine of Evolution upon philosophical tenets and upon the growth of philosophical system. The method of instruction will combine lectures by the instructor with papers and discussion by the class.

[Thursday, 9.30-11.00 A. M., B₁ O.]

For other courses dealing with Metaphysics, see courses 1, 3, 43, 46 and 48.

PHILOSOPHY OF RELIGION

Professor LADD :—

27 *Philosophy of Religion.* 2 hrs.

In this course a thorough examination will be made of all the principal facts and conceptions of the religious life of man, as

seen from the point of view of reflective thinking. After a brief Introduction defining the nature of the subject and its method, the nature, origin, development, and differentiation of Religion itself will be considered. All the problems connected with the Theistic, and the contrasted Positivistic, Deistic, and Pantheistic conceptions of God and of his relation to the world (Nature and the Supernatural), will then be discussed. The nature of man's religious life and of the Divine education of the race, of revelation, inspiration, miracle, and the doctrine of faith, prayer, and worship, will be carefully studied. And the concluding portions of the course will embrace such topics as the nature of the religious community, the immortality of man, and the spread of the Divine Kingdom. Reading of some of the principal authorities on these subjects will be required.

[Monday and Wednesday, 4.00 P. M., A. O.]

28 *Philosophy of Religion.* 3 hrs.

Same as above, with the addition of special work of research to be presented in papers and discussed in the class.

[Monday, 4.00 P. M., Wednesday, 4.00–6.00 P. M., A. O.]

Professor STEVENS:—

29 *The Grounds of Theistic and Christian Belief.* 1 hr.

A discussion of the principal forms of the theistic argument, and of their application to the defense of Christianity against current objections.

[Wednesday, 8.30 A. M., E. D.]

30 *The Anti-Theistic Theories.* 1 hr.

This course will be based upon Flint's *Anti-Theistic Theories*, and will be supplementary to the lectures on Theism (course 29).

[Monday, 3.00 P. M., E. D.]

Professor HOPKINS:—

31 *Comparative Religion.* 1 hr. 1st term.

A course of weekly lectures in the first term. These lectures take up the study of religion from the comparative point of view, treating of the underlying principles of religion as shown in the religious phenomena of different nations and races, from lower

to higher forms of religious expressions. They are open to all graduate students, members of the theological school, and Academic Junior and Senior classes.

[Friday, 3.00-4.00 P. M.]

For a course in Systematic Theology, see the Divinity School Catalogue.

PEDAGOGICS

Dr. ROWE :—

32 *Systematic Pedagogy.* 1 hr.

This course will give a general survey of the field of education. The relation of pedagogy to allied subjects, and the fundamental aims, principles and methods of education in organization, discipline and instruction will be discussed. The course thus consists of two parts: (1) *educational foundations*, and (2) *the methodology of education*. [The work for the year 1902-1903 will include only the second part.] The subjects will be considered in both their theoretical and practical aspects. Pains will be taken to acquaint the student with the most helpful books in the wide range of educational literature. Papers and collateral reading will be required.

This course is intended both for those who wish some acquaintance with this department of knowledge and for those who intend to teach.

[Saturday, 10.30-11.30 A. M., C₂ O.]

33 *Practical Pedagogy.* 1 hr.

The method of instruction, school discipline, and the study of children will be considered as presented by McMurry's *Method of the Recitation*, Tompkins' *School Management*, and Rowe's *Physical Nature of the Child* respectively.

These books will be read and discussed as to their contribution to the needs of the practical teacher. To those already familiar with these other works will be recommended.

[Saturday, 9.30-10.30 A. M., C₂ O.]

34 *School Organization, Equipment and Management.* 1 hr.

An opportunity is offered a limited number of students to study the business side of schools of this vicinity. Three hours a week of observation will be required and record kept in notebooks. There will be discussions on the value and economy of the various devices seen.

Dr. McALLISTER :—

35 *Experimental Pedagogy.* 1 hr.

A summary of the results of experimental methods as applied to educational subjects. The topics treated will include: training of the senses, observation, memory, quickness of perception and thought, writing, drawing, fatigue, and study of children.

[Saturday, 11.30–12.30 A. M., 2 H. H.]

Dr. W. J. TAYLOR :—

36 *History of Education.* 2 hrs.

This course will comprise readings and lectures on the history of education, including a study of the work of representative educational Reformers, and the reading of selected educational classics. The course is especially but not exclusively adapted to those who intend to engage in educational work.

[Tuesday and Thursday, 5.00 P. M., B₁ O.]

Professor PHILLIPS, and others :—

37 *Equipment and Methods of the Teacher.*

Informal lectures, open to all students interested, on the equipment and methods of the teacher: of Mathematics, by Professor Phillips; of Physics, by Professor A. W. Wright; of Science, with especial reference to the Biological Sciences, by Professor Chittenden; of Science, with especial reference to Geology, by Professor Williams; of Chemistry, by Professor Wells; of Latin, by Professor Morris; of Greek, by Professor Goodell; of German, by Professor Palmer; of French, by Professor Warren; of English, by Professor Phelps; of Biblical and Semitic Literature, by Professor Kent; of History, by Professor Bourne; of Economics, by Professor Fisher; of Philosophy, by Professor Ladd. Three lectures on each subject will be given, at hours to be announced on the University Bulletin.

For a course on Religious Education, see Prof. Brastow's course on *Christian Pedagogy* offered to divinity students.

HISTORY OF PHILOSOPHY

OF DUNCAN :—

ancient Philosophy.

2 hrs.

A study of the history of philosophy from its origin among the Greeks down to the opening of the Modern Period, with cursory reading of selected specimens of the philosophical literature of the periods studied. Especial attention will be given in Greek philosophy to Plato and Aristotle and the post-Aristotelian schools.

[Tuesday and Thursday, 9.30-10.30 A. M., A, O.]

Modern Philosophy.

3 hrs.

A critical study of the systems of speculative thought from Descartes to the present time, especially of the great systems of the XVIIth and XVIIIth centuries, with cursory reading of philosophical masterpieces from Descartes to Kant: Descartes' *Meditations* and *Principles of Philosophy*, pt. I; Bacon's *Novum Organum*; Spinoza's *Ethics*—selections; Locke's *Essay on Human Understanding*—selections; Leibnitz's *Monadology and Philosophical Opuscles*; Berkeley's *Principles of Human Knowledge*; Hume's *Inquiry concerning Human Understanding*; Reid's *Inquiry into the Human Mind*; Kant's *Prolegomena to any Future Metaphysics*. Two hours are devoted to expository and critical lectures; the third hour (which may be changed to two hours, as desired) to the presentation and discussion of papers by the students, and to the informal consideration of important problems, especially of those relating to the philosophy of knowledge.

[Tuesday, Thursday, and Saturday, 8.30 A. M., A, O.]

OF DUNCAN :—

Medieval Philosophy.

1 hr.

In this course the continuity of philosophical reflection will be traced from the time of the later Greek philosophers to the Middle Ages. Attention will especially be paid to the influence of Christianity in modifying and transcending Greek thought; to the systems that grew up on the basis of theology; and to the revival of learning which created the new spirit in science, philosophy, ethics and religion. The value of these speculative movements for modern thought will be constantly kept in sight and

critically estimated. Harnack's *History of Dogma*, with special reference to the original documents, will be a text-book for the course.

[Wednesday, 10.30 A. M., A₂ O.]

Dr. CHURCHILL :—

41 *Plato's Dialogues.*

Nearly all the well authenticated Dialogues of Plato will be read in English (Jowett's translation), with a view to examining Plato's philosophical opinions as illustrating the permanent and most interesting problems of philosophy.

[Monday and Friday, 10.30 A. M., A₂ O.]

[The two following courses may be taken either as studies in philosophy or as studies in Greek. Philological discussions will be introduced into both these courses in so far as such discussions may be necessary to a clear understanding of the thought involved.]

Dr. STEARNS :—

42 *Pre-Socratic Philosophy.* 2 hrs.

The sources and remains of the earliest Greek philosophy are critically examined and interpreted with a view to explaining the origin and first developments of that line of reflective thinking which has had most influence upon modern scientific and philosophical ideas and problems.

[Tuesday and Thursday, 10.30 A. M., B₁ O.]

43 *Aristotle's Metaphysics.* 2 hrs.

Selected chapters in the *Metaphysics* will be translated and interpreted. Especial emphasis will be laid upon the new and enduring conceptions which underlie Aristotle's thinking. The effort will be constantly made to understand the philosophical thought of the author, and to illustrate and criticise it by comparison with the now current thought on the same topics.

[Wednesday, 2.00-3.30 P. M., B₁ O.]

For other courses dealing with the History of Philosophy, see courses 16, 18, 21, 23, 26 and 44-48.

PHILOSOPHICAL CRITICISM

Professor LADD :—

- [44 *Modern Pantheism and Pessimism.* 2 hrs.

Schopenhauer's *World as Will and Idea* is read with constant comparison with the views of ancient and modern pessimists, especially with Hartmann. Most of the work is research, the results being presented in elaborate papers for discussion before the class.

Omitted in 1902-1903.]

Professors DUNCAN (a) and SNEATH (b) :—

- 45 *Kant Seminary.* 2 hrs.

(a) A thorough study of the *Critique of Pure Reason* and the *Prolegomena to any Future Metaphysic*. The effort is constantly made to understand Kant's system of thinking in the light of the history of opinion since his time, and especially of opinion upon the same subjects in the present day. (a) only will be given in 1902-1903.

(b) A comparative study of Kant's *Critique of the Practical Reason* and *Fundamental Principles of the Metaphysic of Ethics*, and of Aristotle's *Nicomachean Ethics*, with especial reference to a critical examination of the relative claims of formalistic and of teleological ethics.

[Wednesday, 9.30-11.00 A. M., B₁ O.]

Professor DUNCAN :—

- 46 *The Philosophy of Herbert Spencer.* 2 hrs.

This course is a study of the Evolution Theory of Spencer in its psychological, ethical and metaphysical aspects. Spencer's *First Principles*, *Principles of Psychology* (selections), and *Data of Ethics* are read and discussed.

[Monday, 8.30-10.00 A. M., B₁ O.]

Professor SNEATH :—

- *47 *Types of Philosophy.* 2 hrs.

A study of the problems of Philosophy from the standpoint of the leading types or "schools" of Philosophy—such as Dualism, Materialism, Idealism, Realism, etc. A representative writer of each school will be read and criticised. The course is primarily a course in philosophical criticism.

[Monday and Wednesday, 9.30 A. M., A₂ O.]

Dr. HESS :—

48 *The Philosophy of Lotze.* 2 hrs.

An exposition and criticism of the philosophy of Lotze as contained in his *Microcosmus*, which deals with such philosophical problems as the relation of philosophy, science and religion ; the different views of nature, especially the mechanical and teleological explanations ; the conception of "law" in nature, and evolution ; the existence and the immortality of the soul ; man as a moral and as a religious being ; the existence and nature of God, and the relation of God to the world ; the problem of evil ; etc.

[Wednesday and Friday, 11.30 A. M., B₁ O.]

Dr. MONTGOMERY :—

49 *German Philosophical Writings in the Original.* 2 hrs.

Exposition of recent trends of philosophical thought in Germany. The class will read in German Schopenhauer's *Die Welt als Wille und Vorstellung*, and then take up the reading of current discussions in some German philosophical magazine.

[Monday and Friday, 2.00 P. M., A₂ O.]

50 *French Philosophical Writings in the Original.* 2 hrs.

Discussions of the French schools of philosophy in the nineteenth century. The class will read in French some of the essays in Caro's *Philosophes et Philosophie*, and then take up the reading of current discussions in some recent French philosophical magazine.

[Monday and Friday, 3.00 P. M., A₁ O.]

II. THE SOCIAL SCIENCES, HISTORY, AND LAW

WILLIAM H. BREWER, Ph.D.	ARTHUR M. WHEELER, LL.D.
WILLIAM G. SUMNER, LL.D.	CHARLES H. SMITH, LL.D.
WILLIAM K. TOWNSEND, D.C.L.	GEORGE B. ADAMS, Ph.D.
HENRY W. FARNAM, R.P.D.	WILLISTON WALKER, Ph.D., D.D.
EDWARD G. BOURNE, Ph.D.	JOHN C. SCHWAB, Ph.D.
IRVING FISHER, Ph.D.	HENRY C. EMERY, Ph.D.
FREDERICK WELLS WILLIAMS, B.A.	OLIVER H. RICHARDSON, Ph.D.
MAURICE H. ROBINSON, M.A.	CLIVE DAY, Ph.D.
HENRY B. LEARNED, M.A.	WILLIAM B. BAILEY, Ph.D.
HERBERT E. GREGORY, Ph.D.	ALBERT G. KELLER, Ph.D.
GEORGE GRANT MACCURDY, M.A.	JOHN P. NORTON, Ph.D.

The BOOCOCK LIBRARY (founded in 1896 by Mr. and Mrs. S. W. Boocock) is a department library in the Social Sciences, which supplies students with the most rare and special works in those subjects which the University Library does not contain. Any books needed by special students will be obtained. Students of all degrees of advancement will find reference books in the Boocock Library, and are invited to apply for access to it to Prof. Sumner.

The ANTHROPOLOGY CLUB meets upon notice for papers and discussions in Anthropology (Historical and Somatic), Ethnology, Sociology, and Demography.

When the classes in courses *5 and *6 reach the proper degree of advancement, they are divided into squads for visits to the Museums of Anthropology and Ethnography under the guidance of competent instructors.

The POLITICAL SCIENCE CLUB, comprising the graduate students and instructors in the social sciences, has its headquarters at 11 White Hall, which are open to members at all times. The department library there installed contains a collection of economic works generally required by advanced students. Fortnightly meetings are held during the academic year. Announcement of the subjects discussed are made in the University Bulletin.

Opportunities are given students to visit such charitable and penal institutions and agencies of social betterment as are in New Haven, or within easy access of it.

The HISTORICAL SEMINARY ROOM, No. 90 High street, contains a reference library to which graduate students may have access at all hours.

The HISTORICAL CLUB meets fortnightly for the reading and discussion of papers and for reports on current periodicals.

Professor SUMNER —

1 *Anthropology.* 2 hrs.

A careful study of Ranke's *Der Mensch* (2d ed.), with an examination of the separate topics by means of all the appropriate material.

[Monday, 10.30, and Thursday, 9.30 A. M.]

2 *The Self-Perpetuation of Society.* 2 hrs.

(Section II of Systematic Societology.) An historical and ethnological study of the evolution of the *Marriage Institution*; *mores*, taboo, idealization. The *Family*; its forms, parenthood, kinship, status of woman. Comparative legislation on domestic relations. *Population*. The history, law and policy of population.

[Thursday and Friday, 10.30 A. M.]

[3] *The Mental Reactions.* 2 hrs.

(Section IVa of Systematic Societology.) An ethnological study of the development of the *Mental Processes* and of the growth and contents of the *Mental Outfit* of the human race in the earlier stages. Ghost-fear, daimonism, otherworldliness, knowledge and pseudo-knowledge, the aleatory element, world-philosophy, *mores*, codes, taboo, therapeutics, etc.

Omitted in 1902-1903.]

[4] *The Beginnings of the Industrial Organization.* 2 hrs.

An ethnological study of the industrial organization from its earliest beginnings. Division of labor between the sexes and the special functions of each; regulation of industry; slavery; formation of capital; discoveries and inventions; domestication of animals and plants; money, etc.

Omitted in 1902-1903.]

*5 *The Science of Society.* 2 hrs.

An elementary course, with text-book lessons and examinations, in Anthropology and Ethnology, with the origin of civilization and the development of institutions.

In connection with this will be given a course of lectures on Systematic Sociology [Societology]. Topics are: The organization of society; the individual and the social; social forces; militarism and industrialism; property; marriage, family, and the status of women; primitive notions in religion and philosophy; civil government, law and rights; slavery and classes; economic interests and their collisions; conditions of welfare; origin of moral standards; reaction of reason on experience. These topics are treated exclusively in the light of Historical Anthropology and Ethnology.

[Monday and Friday, 8.30 A. M.]

*6 *The Science of Society.* 2 hrs.

A course with a German text-book (Lippert's *Kulturgeschichte*; 2 vols., Stuttgart, 1887), for those who are able to read difficult German. The exercises are coincident with those of course 5, including the lectures as above.

[Monday and Friday, 8.30 A. M.]

Professor FARNAM:—

[7 *The Principles of Public Finance.* 2 hrs.

A systematic treatment of the subject of government expenditure, government income, and government debt, illustrated by references to the financial statistics and experience of modern states.

Omitted in 1902-1903.]

8 *Social Politics.* 2 hrs.

A critical examination of the results of legislation designed to strengthen the economic position of the weaker social classes.

[Tuesday and Friday, 9.30 A. M.]

9 *Pauperism and Crime.* 1 hr.

A study in social pathology, mainly with reference to its economic aspects.

[Wednesday, 8.30 A. M.]

- [10 *The Modern Organization of Labor.* 2 hrs. 2d term.

These lectures treat of the historical antecedents and the development during the nineteenth century of associations of wage-receivers. They therefore include an account of the structures, aims, and methods of such societies in different countries, together with a discussion of their relations to socialism, the factory system, labor disputes, labor legislation, workmen's insurance, provision for the unemployed, and other features of the modern industrial world.

Omitted in 1902-1903.]

Professor SCHWAB :—

- *11 *Finance.* 2 hrs.

Topics covered: the history of money and banking in the United States; corporate finance and securities; public finance with special reference to American conditions.

[Tuesday and Thursday, 11.30.]

- *12 *United States Industrial History.* 2 hrs.

Topics covered: history of American industries, with extended reference to tariff legislation; the origin and growth of the modern industrial organization; railroads and industrial combinations.

[Wednesday and Friday, 11.30.]

- 13 *Finance.* 1 hr.

Recent financial history of the United States, with a detailed study of the current money market.

[Tuesday, 12.30.]

- 14 *International Trade.* 1 hr.

The theory of international trade; a short review of the commercial history of the United States; and a detailed study of the current foreign exchange market.

[Monday, 11.30.]

- 15 *United States Public Finance.* 1 hr.

A study of United States Federal, State and local taxation.

[Friday, 12.30.]

- 16 *Economic Research.* 1 hr.
 Instruction in methods of economic research ; practice in preparing bibliographies of economic subjects.
 [Hours to be arranged.]

Professor IRVING FISHER :—

- 17 *Economic Theory.* 2 hrs.
 This course will treat of (1) methods of economic study with especial reference to the use of mathematics in economics and statistics and (2) the applications of these methods to the more difficult problems of economic theory, such as value, prices, price levels, capital, interest, distribution and international trade. Text-books : Fisher, *Brief Introduction to the Infinitesimal Calculus* ; Cournot, *Mathematical Principles of the Theory of Wealth* ; and Pareto, *Cours d'economie politique*, or Marshall, *Principles of Economics*.
 [Tuesday and Thursday, 10.30 A. M.]

- [18 *Theory of Capital.* 2 hrs.
 This course will treat of controverted points as to Capital and its relation to Interest and Distribution. Special attention will be given to the work of Böhm-Bawerk and the elder John Rae.
 Omitted in 1902-1903.]

Professors FISHER and EMERY :—

- *19 *Elementary Economics.* 2 hrs.
 Lectures, two hours a week—for one-half of the year by Prof. Fisher, on the outlines of economic science ; for the second half of the year by Prof. Emery on contemporary economic problems.
 [Wednesday and Friday, 11.30 A. M.]

- 20 *History of Economics.* Pt. I. 2 hrs.
 A course in the history and literature of Economics from the Middle Ages to the English Classical School. Special emphasis is laid on the relation of economic ideas to economic conditions and policy. Lectures and class-room discussion of leading writers.
 [Tuesday and Thursday, 12.30 P. M.]

- [21 *History of Economics.* Pt. II. 2 hrs.
 A continuation of the above course covering the protectionist, "historical" and socialistic reactions from the doctrines of the Classical School.
 Omitted in 1902-1903.]

22 *Commercial Policy.* 2 hrs.

A study of the commercial policy of Europe in the nineteenth century.

[Wednesday and Friday, 12.30 P. M.]

23 *The Speculative Market.* (first half-year) 2 hrs.

A study of the speculative side of modern industry and commerce; the development of the world market; relation of producer to consumer; organized speculation.

Professor EMERY and Assistant Professors GREGORY and KELLER :—

*24 *Commercial Geography.* 2 hrs.

Economic conditions of geographical location, climate, winds, ocean currents; the natural distribution of flora, fauna, mineral treasure, etc. Conditions of human life as affected by natural environment. The frontier trade: "natives" as producers and consumers; trading companies and settlements. Trade routes natural and artificial. The modern international system.

Text-books and lectures.

[Wednesday and Friday, 9.30 A. M.]

Dr. W. B. BAILEY :—

*25 *Statistics.* 2 hrs.

The sources and reliability of statistical data are discussed, and the methods of distinguishing true and false inferences are pointed out. Index numbers are studied, and the lectures treat of statistics of population, crime, suicide, property, etc. The attempt is made to determine the laws which govern the group-action of men.

[Tuesday and Thursday, 11.30 A. M. and 12.30 P. M.]

*26 *American Social Conditions.* 2 hrs.

A critical study of the principal phenomena that are characteristic of American society. The course will deal with the problems connected with the negro, concentration of population in the large cities with the attendant dangers, immigration, poor relief, labor organizations, liquor question, etc.

[Wednesday and Friday, 10.30 A. M.]

27 *Labor System.* 1 hr.

The various theories concerning the payment of labor, the conflicts between capital and labor, strikes, lock-outs, coöperation, profit-sharing, arbitration, compulsory insurance, and the various plans for the amelioration of the condition of the workman. Each member of the class will make a special investigation of some assigned topic.

[Saturday, 10.30 A. M.]

28 *The Economic Systems of Classical Antiquity.* 1 hr.

A critical study is made of the political and social institutions of Greece and Rome. The lectures treat of the income and expenditure of the state, the currency, credit instruments, poor relief, slavery, land tenure, commerce, trade regulations, marriage institutions, etc.

Mr. ROBINSON :—

*29 *Modern Political Institutions.* 2 hrs.

A comparative study of the organization and administration of the modern state and municipality. Assigned readings in representative text-books will be accompanied by a series of lectures upon the political and economic aspects of modern governments. Some of the topics treated are: the origin and development of constitutional government; the protection of individual liberty; the extension of the suffrage; proportional representation; the caucus and the primary; the organization and functions of political parties. During the last half of the year especial attention will be given to the organization and problems of the modern city.

Students able to use French or German may undertake additional work and count the course as the equivalent of three hours.

[Tuesday and Thursday, 9.30 A. M.]

30 *Industrial Combinations.* 2 hrs.

A practical study of the modern industrial combinations or trusts, designed especially to meet the needs of those students looking forward to a business career. The lectures will treat of the development of the industrial combinations and the causes at work producing them; European trusts as contrasted with American trusts; the promotion, financiering and capitalization and incorporation of combinations; monopoly prices and monopoly methods; ability of the trusts to affect prices, wages and

profits; proposed plans for controlling the combinations, such as publicity, taxation of profits, and state ownership.

Each member of this course will be expected to trace the history and operations of some representative combination.

[Monday and Friday, 5.00 P. M. 1st term, 3.00 P. M. 2d term.]

31 *Public Control of Trade and Industry.* 1 hr.

An economic and financial study of the practical results of public regulation of private business enterprises and public ownership and operation of natural monopolies, such as railways, gas plants and other public service corporations. Lectures, readings and reports.

[Saturday, 11.30 A. M.]

Assistant Professor KELLER :—

***32 *Ethnology.* 2 hrs.**

A study of existing nations and tribes; their manners, customs, etc.; analysis and comparison of national traits. The course will deal chiefly with the life of savage and partially civilized peoples. Keane's *Ethnology* and *Man Past and Present* will be used as text-books, and will be supplemented with lectures, papers, and the use of all the illustrative material, such as the Peabody Museum collections, that may be available.

[Tuesday and Thursday, 3.00 P. M.]

33 *Colonization (Economic and Social).* 2 hrs.

The economic, social and ethnological aspects of colonization. A preliminary sketch of ancient and medieval expansion and colonization, followed by a closer study of the experience of the several colonizing states of modern times. Emigration, colonial trade, frontier society, the native question, etc. Text-books dealing with British colonies and colonial policy will be used; the other colonial powers will be treated in lectures.

Graduates are expected to submit, during the year, papers embodying the results of private research. For such research a reading knowledge of some foreign language will be found indispensable.

[Tuesday and Thursday, 10.30 A. M.]

Assistant Professor DAY :—

34 *Economic Organization in Europe.* 2 hrs.

A study of the economic organization in the different countries of Europe, and of its influence on the position taken by them in

the modern world. The subject will be treated from the standpoint of history rather than from that of commercial geography ; the course is designed not so much to impart information of business value as to interest students in the historical aspect of questions of the day. The different countries of Europe will be considered separately, with reference in each to the relative importance of the extractive industries, manufactures and trade, the characteristic organization of each branch of production, and its influence on the national social and political organization. An attempt will be made to estimate the amount and direction of influence exercised by important states in their international relations, and to show the reaction of their foreign policy on life and production at home.

[Tuesday and Thursday, 9.30 A. M.]

[35] *Economic History of Europe.* 2 hrs.

A study of the development of the industrial organization in Europe from the period of the Germanic invasions to the industrial revolution of the nineteenth century. The course is designed mainly to describe the development of economic institutions, incidentally to point out the bearing of this development on that of legal and political institutions.

Omitted in 1902-1903.]

Dr. NORTON :—

36 *Statistical Theory of the Evolution of Man.* 2 hrs.

Statistical methods sufficient to enable students to use the *Biometrika* and other publications devoted to statistical Biology and Anthropology. Topics covered : variation, heredity, panmixia, regression, selection and prepotency. The methods of Pearson, Yule and Galton will be discussed. If desired, opportunity will be offered for research in the Genealogical collection of the Library.

Text-books : Davenport's *Statistical Methods in Biology* and selected portions from the writings of Pearson.

[Monday and Wednesday, 9.30 A. M.]

37 *Trade Statistics.* 2 hrs.

The condition of trade viewed from the standpoint of (i) the international movement, (ii) bank clearings, (iii) the money supply, (iv) the outlook for the harvests and (v) earnings of corporations. Analysis of railroad reports, crop forecasts, visible supplies, etc.

[Tuesday and Thursday, 9.30 A. M.]

Mr. MACCURDY :—

38a *Physical Anthropology.* 2 hrs. 1st half-year.

Lectures and demonstrations. A study of man's position in the zoölogical scale and his structure from the racial standpoint, including characters of race, age, and sex, individual variations, and pathological conditions. In the laboratory, students will have access to suitable collections as well as practice in the use of apparatus.

38b *Prehistoric Anthropology.* 2 hrs. 2d half-year.

Man's place in the geological scale. Physical characters of the earliest known races, their environment and stages of culture. Paleolithic, Neolithic, and Bronze Ages, Hallstatt period and on to historic times. Illustrated by original specimens from the Museum collections and by casts, photographs, etc.

Professor TOWNSEND :—

*39 *American Government.* 1 hr.

This course is intended to give a general knowledge of the political status of the American citizen and of his rights and obligations. Federal and State constitutions and laws will be discussed in order to show how the government is organized, and how its checks and balances operate to preserve its integrity, and to protect the rights of the people under it. Among the subjects to be considered are town, city, State and Federal government, and the relation of the citizen thereto; the functions of courts of justice; the legal aspects of and constitutional limitations upon monopolies, trusts, boycotts, strikes, granger and anti-trust legislation, taxation, corporations; eminent domain; *habeas corpus*; jury trials; admiralty; patents; copyright; trade-marks. The development of American positive law and international law will be examined in connection with a discussion of current events and present political conditions.

Frequent written tests will be required on assigned courses of reading.

[Saturday, 11.30 A. M.]

HISTORY

Professors ADAMS and BOURNE :—

- 40 *Methods of Historical Research and Criticism.* 1 hr.

The first half of this course consists of a discussion of the principles of historical criticism, for which Langlois and Seignobos' *Introduction to the Study of History* will serve as an outline. Several typical problems of internal and external criticism will be examined by the class and thoroughly analyzed. The second half, conducted by Professor Adams, consists of practical exercises in the study of selected historical documents, so arranged as to furnish examples of all the important points of method. The weekly exercises in this course may occupy two hours.

[Monday, 3.00 P. M.]

For a course in Latin Palaeography see Latin course 42.

Professor BREWER :—

- 41 *Physical Geography in its relation to History.* 1 hr. 2d half of 2d term.

A course of about ten lectures discussing the following topics : the relations of man to the region he inhabits ; physical geography as related to the development of civilization ; natural aids to the defence and protection of communities ; natural resources and productions ; the facilities for commerce ; the effect of these several factors on the history of nations ; and the modification of these natural conditions by modern science and invention.

[Thursday, 10.30 A. M.]

Assistant Professor F. W. WILLIAMS :—

- *42 *Ancient Oriental Nations from the earliest times.* 2 hrs.

A comprehensive survey of the beginnings of civilization, and its development among the principal nations of antiquity, including Babylonia, Assyria, Egypt, Phoenicia, and Media. This course illustrates the connection of Biblical and profane history, discusses the origins of political and social institutions, religions, the arts and sciences, and the Asiatic sources of European civilization, and constitutes an introduction to the study of history.

[Monday and Wednesday, 12.30 P. M.]

Professor PERRIN :—

44 *Greek History.* 3 hrs.

Thucydides and the Tradition of the Pentekontaetia from Thucydides to Plutarch. Studies in the criticism of historical sources.

[See course 2, Greek, p 67.]

Professor WALKER :—

45 *General Church History.* (1st Course.) 3 hrs.

The aim of this course for the year 1902-3 is to present an outline of Church history from the establishment of Christianity to the end of the Crusades. Special attention is paid to the spread of Christianity, the conversion of the Roman Empire, Monasticism, the effects of the Germanic invasions, and the efforts of the Church for the Christianization of northern and eastern Europe, the rise of the Papacy, its conflict with the Empire, and the Crusades.

[Wednesday, Thursday and Saturday, 9.30 A. M.]

Professor ADAMS :—

*46 *Medieval History (first half).* 2 hrs.

From the beginning of the fourth to the tenth century. The subjects most fully discussed will be the fall of Rome; the spread of Christianity; the foundation and organization of the new German states; the beginning and growth of the papal power; the formation of the Frankish state; the rise and conquests of Mohammedanism; the empire and reforms of Charlemagne; and the separation of his empire into the modern states.

The development of civilization will be kept constantly in view throughout, and such institutions of both church and state as exerted an influence upon later times will receive especial attention.

Omitted in 1902-1903.]

[This course alternates with the following.]

*47 *Medieval History (second half).* 2 hrs.

From the beginning of the tenth to the middle of the fifteenth century.

The earliest organization of the modern states; feudalism and feudal society, considered institutionally and economically; the

Holy Roman Empire and the monarchical papacy ; the crusades and their results ; the growth of commerce and the rise of the third estate to political influence ; the intellectual renaissance of the thirteenth century, with the beginning of universities and the revival of Roman Law ; the rise of England and France with contrasted constitutions, the conflict between them and the decline of Germany ; and the beginning of modern diplomacy.

[Tuesday and Thursday, 9.30-10.30 A. M., C Alumni Hall.]

Professors ADAMS and WALKER :—

48 *Medieval Institutions.*

A two or three years' course. Not a lecture course. The seminary method will be employed throughout and large use will be made of the original material. A rapid reading knowledge of Latin, German and French is required. The object of the course is to make the student acquainted with the literature of the field, with the problems that are still unsolved, and with the sources which have been and must be used in their solution. In exceptional cases only will students be encouraged to take this course in their first year of graduate work.

[a Professor ADAMS. 2 hrs.

a. The first year's course considers later Roman and early German institutions, and their combination in the Frankish state ; the development of the papal power and its special institutions ; the institutions of Charlemagne's empire ; the origin of feudalism ; and the beginnings of national governments.

Omitted in 1902-1903.]

b 1 Professor WALKER. 1 hr.

Second year's course with special reference to French institutions from Louis VI to Louis IX. The aim will be to trace the growth of the power of the French monarchy during one of the most significant periods in its development ; to discuss the methods by which the authority of the crown was extended ; and to examine the constitution and activities of the more important organs of government.

b 2 Professor ADAMS. 2 hrs.

Second year's course with special reference to Norman and Angevin institutions in England. The course will open with a somewhat detailed study of feudal institutions of the tenth and eleventh centuries, and will then follow the institutional development in England from the Norman conquest to the establishment of parliament.

Assistant Professor F. W. WILLIAMS :—

- *49 *Medieval Asia and the Mohammedan Conquest.* 2 hrs.

An attempt to supplement the history of Medieval Europe by following the events in Western Asia during the period between Alexander's death and the capture of Constantinople, 1453. The course exhibits the gradual effacement of Hellenic influences in Asia, the continual contest between Rome and the East, and the secular antagonism between Oriental and Occidental civilization. It takes up in succession the Parthian and Sassanid Empires, follows the rise of Islam and its extension under the Saracens and Turks, and shows the influences of Asiatic culture upon Modern Europe.

[Tuesday and Thursday, 11.30 A. M.]

Professor WALKER :—

- 50 *General Church History.* (2d Course.) 2 hrs.

This course is in continuation of course 45, but may be taken independently of it. Pursuing the same general method, its attempt is to trace the movements preparatory to the Reformation; to discuss the influence of the Renaissance and the discoveries; to examine the reformatory attempts within the Church; to follow in outline the story of the revolt from papal obedience in Germany, Switzerland, Scandinavia, France, the Netherlands, England and Scotland, and the Roman "Counter-Reformation"; and to enquire into the religious, political and social consequences of that revolt to the Peace of Westphalia on the European Continent and to the Toleration Act in England.

[Tuesday and Friday, 9.30 A. M.]

- [52 *Life and Work of Calvin.* 1 hr. 2d term.

In this course Calvin's personal characteristics, his education and his relation to the intellectual movements of his time are discussed; his theology is briefly examined; and especial attention is devoted to his work as an organizer, and to the governmental, religious, and educational development of Geneva under his leadership.

Mr. LEARNED :—

- [53 *The Early Italian Renaissance.* (1300-1500.) 2 hrs.

This course is offered as an introduction to the period of the Reformation and will be devoted to a study of those phases of

Italian life and thought which influenced the history of western Europe. The course will be divided into three parts. (i) Political theorists from Dante to Machiavelli. (ii) The meaning of Italian Humanism, particularly as seen in the writings of Petrarch. (iii) The age of Lorenzo de Medici as an expression of the Italian Renaissance. Students will be asked to read (i) selections from Dante's *De Monarchia*, the *Defensor Pacis* of Marsiglio of Padua, and Machiavelli's *Il Principe*, and (ii) selections from Petrarch's writings.

Omitted in 1902-1903.]

Assistant Professor RICHARDSON :—

*54 *The Renaissance and the Reformation.* 1 hr.

In this course the Renaissance and Reformation will be treated primarily as intellectual movements and considered in their relations to the intellectual development of Europe ; political history will be noticed in so far only as is essential.

The course differs radically in character from courses *55 and *56 and does not cover the same ground.

Students will be required to do much work in the library.

[Wednesday 8.30 A. M., C Alumni Hall.]

*55 *History of Northern Europe from the Reformation to the death of Frederic the Great.* 2 hrs.

During the first half of the course the centre of interest will be found in the religious and political rivalries of the era of the Reformation : in the latter half, in the history of Brandenburg-Prussia from the time of its rapid economic, political and military development under the Great Elector and Frederic William I to its acquisition of world-power under Frederic the Great in contest with Austria and France.

Considerable attention will be given to the history of the Prussian constitution and to topics of economic interest, such as the decline of the Hanseatic League, the economic results of the Thirty Years' War, and the development of the resources of Brandenburg-Prussia by its greatest rulers.

Lectures and collateral reading.

[Tuesday and Thursday, I, 11.30 A. M.; II, 12.30 A. M., C Alumni Hall.]

[This course alternates with course *56.]

- [*56 *History of France from the Reformation to the French Revolution.* 2 hrs.

This course will deal not only with the internal history of France, but also with its relations to the larger problems of modern European history—the progress of the Reformation and the Counter-Reformation, the formation and development of the modern European state-system, colonial expansion, the great wars and treaties of the modern epoch, the growth of political and economic science and the political and intellectual movements preparatory to the Revolutionary Epoch.

Lectures and collateral reading.

This course is omitted in 1902-1903. It alternates with course *55.]

- [57 *Studies in the Reign of Louis XIV.* 1 hr.

Attention will be paid to the constitutional Fronde, the political training and governmental methods of the king, and the development of political theory.

The work will consist largely in the reading and criticism of characteristic passages in the writings of Louis XIV, Cardinal de Retz, Saint-Simon and Bossuet. Use will also be made of the correspondence of the time.

Not given in 1902-1903.]

- 58 *Studies in the History of Brandenburg-Prussia.* 1 hr.

Considerable attention will be given to economic and constitutional developments in the days of the Great Elector, Frederic William I and Frederic the Great. The work will be based upon Bornhak's *Geschichte des Preussischen Verwaltungsrechts* and the documents in Altmann's *Ausgewählte Urkunden zur Brandenburgisch-Preussischen Verfassungs- und Verwaltungsgeschichte*, and Zurbonsen's *Quellenbuch zur Brandenburgisch-Preussischen Geschichte*.

Professor WHEELER:—

- 59 *History of Treaties, 1763-1815.* 1 hr.

[Wednesday, 5.00 P. M.]

- *60 *History of Europe since 1789.* 2 hrs.

Mainly political, introductory to European politics of our day.
[Tuesday and Thursday, 9.30 A. M.]

- [61 *Investigation of special topics in European History
from 1789 to 1815.* 1 hr.

A general knowledge of the period, and ability to read French or German easily, are required.

Omitted in 1902-1903.]

Professor ADAMS (first half-year) and Assistant Professor
RICHARDSON (second half-year):—

- *62 *English History.* 3 hrs.

Political and constitutional. Particular attention will be given to the development of political and judicial institutions, and in the second half to the colonial expansion of England. The more important constitutional documents will be discussed in detail as well as such other contemporary sources as are accessible. While this course is of special value to those who intend to study law, the interest of the general student will also be kept in view.

[Monday, Wednesday, Friday, 10.30 A. M.]

Assistant Professor RICHARDSON:—

- 63 *English History from the accession of the Tudors to the
reign of William and Mary.* 2 hrs.

A research course which extends through two years and lays more stress upon the constitutional than upon the political side of the subject. Construction of bibliographies, and reports based upon independent investigation of the sources, form an important part of the work.

a. The course for the first year embraces the period between 1485 and 1603. The reigns of Edward VI and Mary are treated with comparative brevity in lectures, with assigned readings from primary and secondary sources, while particular attention is paid to the reign of Henry VII and to constitutional developments under Henry VIII and Elizabeth. [Course *a* is given in 1902-1903.]

b. The course for the second year embraces the period between 1603 and 1688. The constitutional history of the Puritan Revolution will receive especial consideration. The work consists in large part of a systematic study of the documents contained in Prothero's *Statutes and Constitutional Documents*, and Gardiner's *Constitutional Documents of the Puritan Revolution*. [Course *b* is not given in 1902-1903.]

Professor WHEELER :—

- 64 *Constitutional History of England since 1760.* 1 hr.
Lectures and required reading.

Professor BOURNE :—

- *65 *American History [1492-1763].* 2 hrs.

This course will deal with the history of the American Colonies from the beginning of the discoveries until the beginning of the American Revolution. The nature and objects of colonies, the character and aims of the colonists, the political, economic, and social development of the colonial communities, will be the leading topics.

The course will include a survey of the French and Spanish colonial establishments in America. Lectures, required reading and the study of selected documents.

[Tuesday and Thursday, 9.30 A. M.]

- *66 *American History [1765-1860].* 2 hrs.

A general course in the political History of the United States from the beginning of the Revolution to the Civil War. The causes and progress of the Revolution, the formation of the Union, the rise and growth of parties, the development of democracy, the influence of the westward expansion and of slavery on political life, and the origin and significance of the more important economic questions will be discussed. Lectures, outside reading and bibliographical practice.

[Monday and Friday, 10.30 A. M.]

- [67 *The American Revolution and the Formation of the Union.* 2 hrs.

After a brief survey of the English colonial system as it existed in the first half of the eighteenth century, the causes and progress of the Revolution will be taken up in detail. Considerable attention will be given to the political theories of the time, and to the influence of the Revolution in Europe.

In the second part of the course especial attention will be given to the political and economic forces making for a more compact union and to the contemporary political discussion.

Omitted in 1902-1903.]

68 *Diplomatic History of the United States.* 2 hrs.

History of the foreign relations of the United States from the end of the Revolution to the close of the Civil War. Special attention is given to the relations with Spanish America and to the annexations of territory. A reading knowledge of Spanish will be useful for the prosecution of this course.

[Tuesday and Thursday, 3.00 P. M.]

Professor C. H. SMITH :—

69 *American History (Constitutional).* 1 hr.

An historical study of the Federal Constitution, mainly of the Articles relating to the General Government in its three departments, Legislative, Executive, and Judicial.

[Thursday, 9.30 A. M., D. O.]

70 *American History [1860-1876].* 2 hrs.

A study of the Civil War and Reconstruction periods, giving special attention to constitutional questions.

[Tuesday, 9.30-11.20 A. M., D. O.]

Dr. E. H. BALDWIN :—

71 *New England Colonial Society.* 1 hr.

A study of social conditions in New England in the seventeenth century as revealed by colonial legislation.

Laws designed : to provide for the common defense ; to protect life, property and morals ; to aid material development ; and to promote education, are among the topics to be considered.

Colonial records will serve as a basis for the work of the course, but frequent references will be made to other contemporary material.

Dr. P. P. WELLS :—

72 *The Southern States before 1860.* 1 hr.

A research course dealing primarily with social and economic conditions. The sources will be independently investigated and reports made upon such topics as agriculture and commerce, the movement of population, the slave trade, the material condition and legal status of the slave, free laborers, the slaveholding classes, etc.

Assistant Professor F. W. WILLIAMS :—

***73 *Modern Asiatic History.* 2 hrs.**

A course embracing successively the regions of India, Japan, China, and Central Asia, with particular regard to their history since the seventeenth century, their governments, and their relations with European powers. The culture, faiths, and sociology of existing nations in the Far East are here considered with a view of interesting those whose historical knowledge is confined to the Western world. The course is designed to stimulate further reading by students in special topics suggested by the instructor, upon which written essays will be presented and discussed. It also offers an opportunity for those who contemplate missionary careers to acquaint themselves with the political and social conditions of the more important foreign missionary fields.

[Tuesday and Thursday, 12.30 P. M.]

***74 *European Colonies in Asia and Africa.* 2 hrs.**

The history of colonization as undertaken and systematized by European nations in modern times especially in regions already populated. In connection with the courses leading to the acquisition of colonies, the development of the colonial administration of each of the great powers is treated in turn. The course will involve the investigation of special subjects assigned by the instructor and the critical discussion of brief theses written upon them.

(For the sociological aspects of modern colonization see course 33, given by Dr. Keller.)

[Monday and Wednesday, 11.30 A. M.]

75 *Diplomatic Intercourse with Asiatic Nations.* 2 hrs.

A special study of the relations between the states of Eastern Asia, Europe and America during the second half of the nineteenth century.

Professor BOURNE :—

[76 *Historiography in America.* 1 hr. 2d half-year.

A critical survey of historical writing and scholarship in America.

The principles of historical criticism applied, first, to narrative histories which are classed as sources and, second, to selected secondary authorities.

Omitted in 1902-1903.]

77 *Modern European and English Historiography.*

1 hr. 2d half-year.

History of modern historical literature and investigation from the middle of the eighteenth century. After a brief review of the general condition of historical studies in the last century, the modern development of historical study in Germany, France, and England is examined and its progress followed in the representative works of historical scholarship down to our own time.

III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.

EDWARD L. CURTIS, Ph.D., D.D.	FRANK C. PORTER, Ph.D., D.D.
BENJ. W. BACON, Litt.D., D.D.	FRANK K. SANDERS, Ph.D., D.D.
CHARLES C. TORREY, Ph.D.	CHARLES F. KENT, Ph.D.
WARREN J. MOULTON, B.D., Ph.D.	

Connected with the department are the Seminary rooms, the Reference Libraries, the Special Collections and the Semitic and Biblical Club.

The SEMINARY ROOM in 9 Fayerweather Hall is adjacent to the two recitation rooms used by the department. It contains a good reference library in Biblical Literature, and can be utilized for purposes of study at all times.

A REFERENCE LIBRARY, available for students, situated very near to the departmental library proper, is the Trowbridge Reference Library of the Divinity School. It contains more than 3,000 carefully selected volumes, and is particularly rich in works of reference for Biblical study.

The SALISBURY COLLECTION of Oriental manuscripts, books and works of reference, the library of the American Oriental Society, the collection of rare and valuable Arabic manuscripts, made by Count Landberg, acquired recently for Yale University through the munificence of Morris K. Jesup, Esq., of New York City, and the well-stocked Semitic sections of the general Library, furnish exceptional advantages and opportunities for independent research to the student of Semitic literature.

For courses in Hellenistic Greek, see the announcement of the Department of Classical Philology. For courses in Oriental History, see courses 73, 74 and 75 in the Department of Economics and History.

The SEMITIC AND BIBLICAL CLUB, composed of the instructors, the students who are studying for a degree, and others who are interested in the work, holds stated semi-

monthly meetings, at which papers on subjects of interest to Biblical students are presented and discussed.

The BIBLICAL RESEARCH CLUB meets for discussions of a semi-popular character on Biblical subjects.

HEBREW

Professor CURTIS :—

- 1 *Elementary Hebrew.* 4 hrs.
The year's work includes a mastery of the elements of Hebrew and the translation of Genesis.
- [2 *The Book of Job.* 1 hr.
The grammatical and historical exegesis of the Hebrew text.
Lectures and recitations.
Omitted in 1902-1903.]
- 3 *Selections from Proverbs, and the Five Megilloth.* 1 hr.
The grammatical and historical exegesis of the Hebrew text.
Lectures and recitations.
- 4 *Selections from the Psalter.* 2 hrs. 1st term.
The grammatical and historical exegesis of the text, with attention to New Testament interpretation and homiletical application.
- 5 *The Book of Isaiah.* 2 hrs. 2d term.
The grammatical and historical exegesis of the Hebrew text.

Professor SANDERS :—

- 6 *The Textual Criticism of the Old Testament.* 2 hrs. 1st term.
A close textual study of some one of the later Prophets, making use of the apparatus of the Lower criticisms to restore the original text, together with lectures on the apparatus, methods, and history of Old Testament criticism.

Professor KENT :—

- [7 *Advanced Hebrew.* 2 hrs. 1st term.
The reading of the Books of Samuel and a thorough review of the elements of Hebrew grammar. This course continues course 11.
Omitted in 1902-1903.]

- [8 *Hebrew Sight Reading.* 2 hrs. 2d term.

Rapid reading of portions of Jeremiah, Ezekiel and Isaiah xl to lxvi, and selections from the historico-prophetical books. Assignment of special passages for critical study. Two hours of sight reading will count as one of these hours.

[Omitted in 1902-1903.]

- 9 *The Minor Prophets.* 2 hrs. 1st term.

Critical translation and interpretation, with a special study of the political, social and religious teachings of each prophet. The elements of Hebrew grammar will also be thoroughly reviewed.

- 10 *Hebrew Syntax.* 2 hrs. 2d term.

A study of the principles of Hebrew Syntax, with the reading of a variety of passages with special reference to a syntactical interpretation.

————— :—

- 11 *Elementary Hebrew.* 2 hrs.

A study of the elements of the Hebrew language in connection with the reading of Genesis i-viii and of selected passages of easy Hebrew.

[Tuesday and Friday, 3.00 P. M.]

Dr. MOULTON :—

- 12 *The History of the LXX. and its Use in Criticism.* 1 hr.

A discussion of the means available for the textual criticism of the Old Testament, especially the Greek translations, their history, and the problems which they present, followed by readings from First Samuel with reference to the variations of the Greek versions.

COGNATE SEMITIC LANGUAGES

Professor TORREY :—

- 13 *Elementary Arabic.* 2 hrs.

The elements of Arabic grammar, including exercises in writing. Rapid reading of easy prose extracts. The text-books used will be Socins' *Grammar* (2d edit.) and Brünnow's *Chrestomathy*.

[Tuesday and Thursday, 3.00 P.M.]

- 14 *The Koran.* 3 hrs. 1st half-year.
Reading of selected suras, with a supplementary study of the life of Mohammed.
- 15 *The Arabic Historians.* 2 hrs. 2d half-year.
The reading of Ibn Hishâm's account of the battle of Bedr.
- [16 *Arabic Poetry.*
The reading of selections from Nöldeke's *Delectus Veterum Carminum Arabicorum*.
Omitted in 1902-1903.]
- 17 *The Old Syriac Gospels.* 2 hrs. 1st half-year.
The reading of a considerable portion of The Lewis Palimpsest (*The Four Gospels in Syriac*; Cambridge, 1894), with attention to both linguistic and critical phenomena. Students who have taken course 27, or its equivalent, will be qualified to enter this course.
- 18 *Elementary Assyrian.* 2 hrs.
The aim of the course is to give the student a good introduction to the Assyrian language and literature. Especial attention will be given to practice in reading both cuneiform and transliterated texts. The text-books used will be Lyon's *Assyrian Manual*, 2d edition, and Delitzsch's *Lesestücke*, 4th edition, 1900.
[Tuesday and Thursday, 2.00 P. M.]
- [19 *Assyrian Historical and Mythological Texts.*
Rapid reading of selected texts, with supplementary study of Assyro-Babylonian history and literature.
Omitted in 1902-1903.]
- 20 *North Semitic Inscriptions.*
The Moabite stone; the Siloam inscription; the Zenjirli monuments, and other old Aramaic remains; selected Phoenician and Palmyrene inscriptions; coins with old Semitic legends. The aim of the course is to acquaint the student with some of the monuments which are especially important for the study of the Old Testament languages and history, and to provide a brief general introduction to North-Semitic epigraphy.
Omitted in 1902-1903.]
- 21 *Sabaeen and Minaean Inscriptions.* 1 hr. 1st half-year.
At least an elementary knowledge of Arabic is required for this course. Some knowledge of Ethiopic is very desirable, but not necessary.

[22 *Elementary Ethiopic.*

The elements of Ethiopic, using Praetorius's *Äthiopische Grammatik* and Bachmann's *Lesestücke*.

Omitted in 1902-1903.]

23 *Advanced Ethiopic.* 2 hrs. 2d half-year.

Reading of the *History of the Martyrs of Nagrân* (Pereira's edition of 1899). If preferred, selections from the *Book of Jubilees* (ed. Charles ; Oxford, 1895) will be read.

24 *General Introduction to Semitic Philology.* 1 hr.

A general view of the Semitic languages and peoples, including a brief survey of their literatures. No previous knowledge of the Semitic languages is required for this course, though some acquaintance with at least the Hebrew language is desirable.

[Monday, 2.00 P. M.]

25 *Semitic Seminary.* 1 hr.

Applicants for membership must be well advanced in at least one of the three languages, Hebrew, Syriac, and Arabic, and must have had at least an elementary course in each of the others. Some knowledge of Ethiopic and Assyrian, especially the latter, is desirable, though not indispensable.

The work of the year 1902-03 will include the comparative study of Semitic poetical forms and the investigation of problems of Semitic phonology and comparative grammar. Students who have made considerable progress in Arabic will have an opportunity to make use of some of the manuscripts in the Jesup and Salisbury collections.

Professor KENT :—

[26 *The Discovery and Decipherment of Ancient Inscriptions.*

1 hr.

A view of the history of excavations in ancient Assyria, Babylonia, Syria, and Egypt, with a study of the problems and methods of the modern excavator. A survey of the different forms and types of Semitic and Egyptian inscriptions and the history of their decipherment.

Omitted in 1902-1903.]

Dr. MOULTON :—

[27 *Elementary Syriac.* 2 hrs.

The principles of the language, with reading of selections in Brockelmann's *Syrische Grammatik*.

Omitted in 1902-1903.]

- 28 *Advanced Syriac.* 2 hrs. 1st half-year.
A continuation of course 27, reading historical selections.
- 29 *Biblical and Palestinian Aramaic.* 2 hrs. 2d half-year.
A study of Biblical Aramaic using Marti's *Aramäische Grammatik*, and of Palestinian Aramaic using Dalman's *Grammatik*.

BIBLICAL LITERATURE

Professor CURTIS :—

- 30 *Ancient Traditions and History of the Jewish People.* 1 hr.
Studies in history and archaeology with the view of determining the meaning and historical value of the Biblical records.
- [31 *Analysis and Exposition of Isaiah, Jeremiah, and Ezekiel.*
(English Bible.) 2 hrs. 2d term.
Omitted in 1902-1903.]
- 32 *Analysis and Exposition of the Twelve Minor Prophets.*
(English Bible.) 2 hrs. 2d term.
- 33 *Old Testament Introduction.* 1 hr.
A brief survey of the history of the canon, text, and versions, followed by special introduction to the Hexateuch and remaining Old Testament books. Lectures.
- 34 *Problems of Hexateuchal Criticism.* 1 hr. 2d term.
A consideration of the problems of Hexateuchal criticism.

Professor PORTER :—

- 35 *Biblical Theology of the Old Testament.* 2 hrs. 2d half-year.
A history of the religion of Israel from its beginning to the time of Christ. Special attention is given to the work and teachings of the several Prophets, to the significance of the Exile, and to the nature and history of post-exilic Judaism.
- 36 *Biblical Theology of the New Testament.* 3 hrs.
The teaching of Jesus is examined in its individuality and in its historical relations and significance. The theology of the Apostolic age is then studied, with special reference to the sources, character, and influence of the thought of Paul, and the problems of the Johannine theology.

- 37 *The Biblical Conceptions of Inspiration and Revelation.* 2 hrs. 1st half-year.
A historical study of these ideas in their growth and variety in the Old Testament, in later Jewish writings and in the New Testament. Special attention will be given to the nature of prophecy, and the rise of the idea of a written revelation, and to the relation of these two to each other. Lectures.

- 38 *The Apocalyptical Literature.* 1 hr.
Studies in the historical conditions and the literary and psychological processes which resulted in the formation of the Jewish apocalypses, and in the historical significance of this literature in relation to the rise of Christianity. A *seminar* course, based on the reading of Daniel, Enoch, the Apocalypses of Ezra and Baruch, and Revelation.

Professor BACON :—

- 39 *The Pauline Epistles.* 3 hrs. 1st term.
Grammatico-historical exegesis of Galatians with a comparison of the Pauline system.
- 40 *The Christological Epistles.* 1 hr. 1st term.
A study of the origin and nature of the Christology of Paul in Ephesians with a comparison of Colossians, Philemon, and Philippians. Lecture course, the class preparing theses.
- 41 *Synoptic Gospels.* 3 hrs. 2d term.
Historico-critical exegesis of the gospel of Mark with a comparison of the synoptic tradition.
- 42 *New Testament Encyclopedia.* 1 hr. 2d term.
Lectures on the philological and historical apparatus for New Testament exegesis, textual criticism and history of the New Testament Canon.
- 43 *The Book of Acts.* 2 hrs. 2d term.
Critical reading of the Book of Acts with application of the principles of historical and documentary criticism.
- 44 *The History of New Testament Literature.* 2 hrs. 1st term.
Lectures by way of special introduction to the several New Testament books.

45 *The Catholic Epistles.* 2 hrs.

Discussion of problems of criticism and exegesis. During the first term the first epistle of Peter will be read; during the second term the epistles of James, Jude, and second Peter. Alternate with 46.

46 *The Johannine Literature.* 2 hrs.

A critical study of the origins of the Fourth Gospel and the Johannine epistles. Research into the type of thought represented, the sources and character of the evangelic tradition followed and the types of doctrine antagonized. *Seminar* method. Alternate with 45.

47 *Problems of Textual Criticism.* 1 hr. 2d term.

A critical comparison of the Alexandrian with the Western form of the text, aiming to exhibit the history of the principal variants and beginning with the Lucan writings. *Seminar* method.

Professor SANDERS :—

[48 *Old Testament Prophecy.* 2 hrs. 2d half-year.

A rapid but thorough study of the prophetic literature of the Old Testament, chronologically arranged, stress being laid upon the distinctive message of each prophet for his own age, on the contribution of each to constructive religious thought, and on the gradual attainment of permanent religious ideas and ideals.

Omitted in 1902-1903.]

49 *Hebrew Wisdom Literature.* 2 hrs. 1st half-year.

An investigation (on the basis of the English translation) of the forms of Hebrew reflective literature and a comparison with the similar literature of other nations. The course will include an interpretation both of the biblical books of Proverbs, Ecclesiastes, and Job, and of the apocryphal books of Ecclesiasticus and the Wisdom of Solomon, and a consideration, both of the wisdom writers as a class and of the importance of this literature in the history of religious thought.

Professor KENT :—

50 *Biblical Literature and History (Pre-exilic).* 2 hrs.

A constructive survey of the literature and history of the Hebrews until the Babylonian exile, 586 B. C., each Old Testa-

ment book being considered in the light of the conditions and problems of the age in which it was written. The history of the Hebrews is studied in connection with that of the contemporary people of Western Asia, and the development of their political, social, and religious institutions is carefully traced. The course aims in general (1) to acquaint the student with the significant facts and forces of ancient Semitic, and especially Israelitish history, (2) to give a thorough familiarity with the origin, literary form, and essential thoughts of the Old Testament books, and (3) to promote an intelligent appreciation of their ethical and religious teachings. This course is intended to serve as a general introduction to the historical, literary, and religious study of the Bible.

[Wednesday and Friday, 9.30 A. M.]

51 *Biblical Literature and History (Post-exilic).* 2 hrs.

A survey of Biblical history and literature from the period of the exile, 586 B. C., to the close of the first Christian century, including the books of the Old Testament not considered in course 50, some apocryphal literature and the whole of the New Testament. This course is complete in itself, while, with course 50, it covers the entire Bible, and the whole range of Asiatic history down to the Roman domination, as far as it relates to Biblical history. Especial attention is given to the life and thought of Judaism and to the origin, development, and fundamental teachings of Christianity.

[Tuesday and Thursday, 11.30 A. M.]

[52 *Israelitish Laws and Institutions.* 2 hrs. 1st half-year.

A chronological arrangement of the different codes and a systematic codification and interpretation of the laws found in the Old Testament. With this classification as a basis, the origin, development, and significance of the social, political, and religious institutions of the Israelites are studied and compared with those of other ancient peoples.

Omitted in 1902-1903.]

53 *Hebrew Poetic Literature.* 2 hrs. 2d half-year.

Investigation (on the basis of the English translation) of the characteristics of Hebrew poetry, classification of the different types found in the Bible, comparison with the examples of Semitic poetry, and a careful study of the relation of literary form to interpretation. Special attention will be given to the origin, structure and interpretation of the Psalter.

- 54 *Biblical Seminary.* 2 hrs.

A course intended to train students for patient, accurate and independent investigation of Biblical and cognate questions. It is open only to those who have a general acquaintance with the field of Biblical history and literature.

During 1902-1903 the origin of Hebrew and Jewish religious ideas and institutions will be considered. Especial attention will be given to the study of the Babylonian, Egyptian, Phoenician, ancient Arabian and Persian religions, and the influence of each of these upon the religion of Israel.

Dr. MOULTON :—

- 55 *The Life of Jesus.* 2 hrs. 1st half-year.

A study of the data given in the Gospels, together with the reading of the more important of the recent works on the Life of Christ.

- 56 *Maccabean History and Literature.* 2 hrs. 2d half-year.

A survey of the history and literature of the period from the death of Alexander the Great, 323 B. C., to the conquest of Palestine by Pompey, 63 B. C.

- 57 *Reading of Theological German.* 1 hr.

The reading of Wellhausen's *Israelitische und Jüdische Geschichte*, 4th edition.

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- 58 *Readings in Post-Biblical Jewish Literature.* 2 hrs.

A sight-reading course in Rabbinic and Talmudic literature with discussions of the later Jewish interpretation of Hebrew law.

Students in this course must have gained a working knowledge of Hebrew and Aramaic.

- 59 *Modern Hebrew Literature.* 1 hr.

The class reads some standard historical novel by a modern writer, which affords practice in the reading of Hebrew and an insight into Jewish life and ideas.

Only a good elementary knowledge of Hebrew is necessary for this course.

IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY

TRACY PECK, M.A.	HENRY P. WRIGHT, Ph.D., LL.D.
BERNADOTTE PERRIN, Ph.D., LL.D.	THOMAS D. SEYMOUR, LL.D.
EDWARD P. MORRIS, M.A.	HENRY R. LANG, Ph.D.
THOMAS D. GOODELL, Ph.D.	E. WASHBURN HOPKINS, Ph.D.
HORATIO M. REYNOLDS, M.A.	HANNS OERTEL, Ph.D.
CECIL K. BANCROFT, B.A.	JAMES W. D. INGERSOLL, Ph.D.
T. WOOLSEY HEERMANCE, Ph.D.	GEORGE D. KELLOGG, Ph.D.
PAUL BAUR, Ph.D.	CHARLES U. CLARK, B.A.
SHERWOOD O. DICKERMAN, B.A.	

Students in this department have at all hours unrestricted use of the departmental library. This is in Phelps Hall, near the Classical seminary rooms, in a large and well lighted apartment amply supplied with tables and private lockers. It now contains three thousand volumes, and additions are made each year, so that the student finds here practically everything needed for ordinary work in the courses in classical philology, except some periodicals and expensive illustrated works, which are easily accessible in the University library.

Special purchases of books will be made for students who are carrying on an investigation, either in connection with their thesis or otherwise.

The CLASSICAL CLUB, consisting of the instructors and students in the department, meets in the library room every Saturday evening, to hear reports and papers in the field of classical philology, or to read and discuss the work of some Greek or Latin author. During the year 1902-1903 the authors read are Homer and Cicero.

Graduate students of this University who are approved by the classical instructors are admitted without charge to the American Schools of Classical Studies at Athens and in Rome.

A series of lectures, one a week through the year, on the history, encyclopedia, and methodology of classical studies, will be given by several of the instructors in coöperation.

Attention is called to the following allied courses in other departments:

In Ancient Philosophy : Courses I, 38 (Ancient Philosophy); 41 (Plato's Dialogues); 42 (Pre-Socratic Philosophy); 43 (Aristotle's Metaphysics).

In Phonetics : I, 11 (Experimental Phonetics).

In the History of Philology : II, 54 (The Renaissance and the Reformation) ; V, 22 (Petrarch and Boccaccio).

Of the following courses those bracketed will be omitted in 1902-1903, but are likely to be offered the next year.

1 *Classical Seminary.*

2 or 3 hrs.

The members are expected to read French and German freely and to have read widely in Greek and Roman literature.

[Tuesday, 3.00-5.00 P. M., 21 or 23 Phelps Hall.]

Professor MORRIS :—

(a) *Catullus.*

1st half-year.

The criticism and interpretation of selected poems with an exhaustive study of the Catullus literature.

Students who intend to take this course should read Catullus carefully in preparation for the work, using the edition of Riese (Teubner) or Merrill (Ginn & Co.).

(b) Professor GOODELL :—

Aristoxenos on Rhythmic and Metric.

2d half-year.

The work will center in the endeavor to make an edition of the extant fragments bearing on these subjects, with a translation, a lexicon of all technical terms, and a complete collection of passages in later writers, particularly the Latin Grammarians, that contain traces of his doctrine. As an introduction to the subject the instructor will lecture one hour weekly during the first half-year.

GREEK.

Professor PERRIN :—

- 2 *Thucydides, and the Tradition of the Pentekontaëtia from Thucydides to Plutarch. Studies in the criticism of historical sources.* 3 hrs.

(a) A course of lectures will be given on the History of Thucydides, its genesis, sources, composition, and termination; and on the design, spirit, and methods of the writer.

(b) The *Pentekontaëtia* (i. 89-117) will be critically read in class (the rest of the work being assigned for private reading), other principal testimonies to the history of this period collected and weighed, and the literary tradition of the history of the period, from Thucydides to Plutarch, examined. Plutarch's *Kimon* and *Perikles* will be read with special reference to their sources.

The apparatus required in the hands of each student taking the course will be: Hude, *Thucydidis Historiae*, Leipzig, Teubner, Vol. I, 1898, Vol. II, 1902; Hill, *Sources for Greek History* between the Persian and Peloponnesian Wars, Oxford, Clarendon Press, 1897; Busolt, *Griechische Geschichte*, Band iii, Teil 1, Gotha, Perthes, 1897; and the Teubner (Sintenis) text of the *Kimon* and the *Perikles* of Plutarch. These books will be imported for all students who apply to Professor Perrin before July 1st. Other apparatus necessary for prosecuting the course will be furnished by the University and Classical Club libraries.

[Tuesday and Thursday, 11.30 A. M.—1.00 P. M.]

- [3 *Thucydides.* 2 hrs.

Practical exercises in the exhaustive critical study of portions of the text of Thucydides, following lectures on the MSS. and bibliography of this author.

Omitted in 1902-1903.]

Professor SEYMOUR :—

- [4 *Epic Poetry.* 3 hrs.

Introduction to the critical study of Homer. Lectures on the history of Homeric study, Epic poetry, the composition and transmission of the poems, life in the Homeric times in its various aspects; Homeric language and verse. These are followed by a familiar but critical interpretation (and exercises in interpretation and criticism) of portions of the *Odyssey*, and of the later Greek epics.

Omitted in 1902-1903.]

5 *The Greek Orators.* 3 hrs.

A study of Greek Oratory; beginning with the orations of Isaeus, and including some of the private orations of Demosthenes, with reference to Athenian life and law, as well as to the development of Attic eloquence.

[Monday, 3.00-4.30, and Wednesday, 4.30-6.00 P. M., 23 Phelps Hall.]

6 *The Greek Bucolic Poets.* 1 hr.

The idylls of Theocritus, Bion, and Moschus, with comparison of bucolic poetry in other literature.

[Tuesday, 5.00 P. M., 23 Phelps Hall.]

[7 *Plato.* 3 hrs.

The *Republic*, and portions of the other dialogues which are most important for its elucidation.

Omitted in 1902-1903.]

Professor GOODELL :—

8 *Sophocles.* 3 hrs.

Reading of the seven extant plays with special attention to the artistic form, including style, treatment of myths, management of the action, use of meters, and the like. A brief but systematic introduction to Greek metric, based on Gleditsch's *Metrik* and the instructor's *Chapters on Greek Metric*, supplemented by lectures and practice in reading, will constitute a part of the course.

[Monday, Wednesday, Friday, at 10.30, 15 Phelps Hall.]

Professor GOODELL :—

[9 *Euripides.* 3 hrs.

Rapid reading of the nineteen plays.

Omitted in 1902-1903.]

Professor REYNOLDS :—

[10 *Aristotle's Poetics. Literary Criticism in Ancient Times.* 1 hr.

Interpretation of the *Poetics* and parts of the *Rhetoric*, with selections from Plutarch, Pseudo-Longinus, and Lucian.

Omitted in 1902-1903.]

[11 *Late Greek Poetry.*

1 hr.

This course includes a survey of Alexandrian and later Greek poetry. Reading of the mimes of Herondas, with selections from the Anthology, and from the hymns of Callimachus, and other fugitive poetry.

Omitted in 1902-1903.]

Professor OERTEL :—

12 *Greek Dialects, and Comparative Grammar of Greek sounds and inflection.* 2 hrs.

Selected inscriptions of each dialect will be read and interpreted. Cauer's *Delectus Inscriptionum Graecarum propter dialectum memorabilium* (Lipsiae, 1883) contains most of the inscriptions to be read and should be in the hands of students. The rest of the time will be devoted to an exposition of the history of Greek sounds and inflections. For this an elementary knowledge of Sanskrit is desirable. Students should provide themselves with Brugmann's *Griechische Grammatik* (3d edition, München, 1900; forming the first half of vol. ii of Iwan Müller's *Handbuch der klassischen Altertumswissenschaft*).

The course of twelve lectures (Course 57, on *Indo-European Phonology*) will serve as an introduction to this. The instructor reserves the privilege of extending this course to three hours a week.

Mr. DICKERMAN :—

[13 *Modern Greek.*

1 hr.

A practical introduction to the subject, using A. Thumb's *Handbuch der neugriechischen Volkssprache*. Particular attention is given to the colloquial language.

Omitted in 1902-1903.]

14 *Greek Epigraphy.*

2 hrs.

a. The local alphabets, and the more important inscriptions written in them.

b. Attic inscriptions, selected for their historical or antiquarian interest.

Professor SEYMOUR :—

- *15 *Homer.* 2 hrs. first half-year.

Parts of the *Iliad* are read rather rapidly, with more attention to their characteristics as literature than to specially linguistic and grammatical questions.

[Monday and Friday, 5.00 P. M., 23 Phelps Hall.]

- *16 *Plato and Aristotle.* 2 hrs.

The *Phaedo* of Plato and the *Nicomachean Ethics* of Aristotle.

[Tuesday and Thursday, 3.00 P. M., 23 Phelps Hall.]

Professor REYNOLDS :—

- [*17 *Homer.* 2 hrs.

Reading of the entire *Odyssey*. The course is intended for the general student of literature.

[Omitted in 1902-1903.]

- *18 *Euripides.* 2 hrs.

A reading-course with reference to Euripides's poetic and dramatic quality. Five or six plays will be read. Discussion of the poet's relation to his own times, style, metres, dramatic innovations, and influence on the Roman and modern dramatists, with occasional lectures.

[Monday and Friday, 10.30 A. M., 14 Phelps Hall.]

- *19 *Lucian.* 2 hrs.

A general reading-course in prose, with discussion of the life and times of Lucian and of his influence upon modern literature. The *Dream*, *Charon*, *Timon*, *Angler* and *True History* will be read, with many minor pieces, including the *Dialogues of the Gods* and *Dialogues of the Dead*. The Teubner text will be used together with Williams's *Selections from Lucian*.

[Tuesday and Thursday, 10.30 A. M., 14 Phelps Hall.]

Mr. DICKERMAN :—

- *20 *Greek Composition and Sight Reading.* 2 hrs.

Exercises in composition and in translation at sight of selections from Xenophon. The course is designed especially for those who intend to teach.

[Tuesday and Thursday, 2.00 P. M., 17 Phelps Hall.]

LATIN
LATIN LITERATURE

Professor PECK :—

- [21 *The Epistles of Horace and the Satires of Persius.* 2 hrs.
Omitted in 1902-1903.]
- 22 *Lucretius.* 2 hrs.

Professor MORRIS :—

- [23 *Plautus.* 2 hrs.
Lectures introductory to the study of Plautus, followed by a critical study of the *Bacchides*. Students should have the complete Teubner text (Goetz-Schoell) or Leo's edition (Berlin, 1895-6).
Omitted in 1902-1903.]

- 23a *Terence.* 2 hrs.
The six plays will be read with special reference to the social life represented and the dramatic structure. Dziatzko's text (Tauchnitz) and Hayley's *Introduction to the Verse of Terence* will be used.

Professor OERTEL :—

- 24 *Selections from Latin Authors on the Latin Language.* 2 hrs.
Reading and interpretation of selected passages from Varro, Cicero, Caesar, Quintilian, Aulus Gellius, possibly also from Festus and some grammarians in Keil's collection which bear on questions of Latin grammar. The first author read will be Gellius. The Teubner edition by Hertz (editio *minor altera*, 2 vols., 1886) should be in the hands of the students at the beginning of the course.

Assistant Professor INGERSOLL :—

- [25 *Latin Comedy.* 2 hrs.
A dozen plays of Plautus, three or four of Terence, and the principal fragments of the other Comic Writers. A course in rapid reading, designed to supplement the critical work on Plautus in other courses.
Omitted in 1902-1903.]

Professor PECK :—

- [*26a *Lucretius and Horace.* 2 hrs.

The Epistles of Horace, including the *Art of Poetry*.
Omitted in 1902-1903.]

- *26b *The Dialogus of Tacitus and the Letters of Pliny.* 2 hrs.

The literary and social condition of Rome in the first century.
[Tuesday and Thursday, 10.30-11.20 A. M., Phelps Hall.]

- [*27 *The Character and Reign of Tiberius.*

Tacitus (*Annals*, i-vi), Suetonius (*Tiberius*), and Velleius Paterculus. The characteristics of "Silver" Latin.
Omitted in 1902-1903.]

- [*28 *Roman Oratory.* 2 hrs.

Cicero (*Brutus*), Quintilian (*x* and *xii*), and Tacitus (*Dialogus*).
Omitted in 1902-1903.]

Professor MORRIS :—

- [*29 *Vergil.* 2 hrs.

An introduction to Vergil, intended to give students who may expect to teach Latin an acquaintance with the best editions and commentaries and with works on special topics, the life of Vergil, the Aeneas legend, Vergil's relation to Greek poets and to earlier Roman poetry, mythology, Vergil in the Middle Ages. Parts of the texts will be carefully interpreted and other parts will be translated and compared with English versions, and there will be practice in metrical reading.

Omitted in 1902-1903.]

Professors H. P. WRIGHT and INGERSOLL :—

- *30 *Latin Satire, Epigram, and Comedy.* 2 hrs.

Selections from Juvenal and Martial, with special reference to a study of the private life of the Romans.

Plautus—three or four plays, with study of literary history, form, and influence.

[Tuesday and Thursday, 9.30 A. M., 11 Phelps Hall.]

- [*31 *Latin Lyric and Elegiac Poetry.* 2 hrs.
Horace, Catullus, Tibullus, Propertius, Latin Hymns.
Omitted in 1902-1903.]

Mr. BANCROFT :—

- *32 *The Fasti of Ovid.* 2 hrs.
With special reference to Roman religion.
[Monday and Friday, 2.00 P. M., 19 Phelps Hall.]

Assistant Professor INGERSOLL :—

- *33 *Latin Literature.* 2 hrs.
A general survey of the whole field, aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, both as to form and as to subject, and to characterize the several periods of the literature in the light of the changing conditions under which the development took place. Lectures, illustrative readings, and direction of the student's private reading. The course is designed especially for those who wish to take their bearings in preparation for special work in this department, and for those who, while their chief interest lies in other departments of study, desire to get a general notion of the range and leading characteristics of a literature in which their previous reading has been more or less desultory.
[Monday and Friday, 9.30 A. M., 12 Phelps Hall.]

THE LATIN LANGUAGE

Professor PECK :—

- [*34 *Early Latin.* 2 hrs.
Study of inscriptions and of the ante-classical literature, based on Allen's *Remnants of Early Latin*, Merry's *Fragments* and Smith's *Selections*.
The course is largely philological and critical, dealing with the origin of forms, constructions, and literature, and it is especially commended to those who expect to teach Latin.
Omitted in 1902-1903.]

Professor OERTEL :—

- [35 *The Italic Dialects and Comparative Grammar of Latin Sounds and Inflection.* 2 hrs.

After a brief survey of the peoples and languages of ancient Italy, a few of the more important Oscan and Umbrian inscriptions are read and interpreted. Students should be provided either with v. Planta's *Grammatik der Oskisch-umbrischen Dialekte* (2 vols., 1892-97) or with Conway's *The Italic Dialects* (2 vols., 1897). The rest of the time will be devoted to an exposition of the history of Latin sounds and inflections in the light of comparative grammar. Either Lindsay's *The Latin Language* (Oxford, 1894) or Stolz-Schmalz' *Lateinische Grammatik* (3d ed., 1900, being the second half of vol. II of Iwan Müller's *Handbuch der klassischen Altertumswissenschaft*) should be in the hands of the student. [For those who intend to take a course in Latin syntax (course 36) the latter is preferable.] An elementary knowledge of Sanskrit is desirable.

The course of twelve lectures (57, on *Indo-European Phonology*) will serve as an introduction to this course. The instructor reserves the privilege to extend this course to three hours.]

Professor MORRIS :—

- 36 *Latin Syntax.* 2 hrs.

Introductory lectures on the history of syntactical study and on the principles and methods of investigation; discussion of syntactical systems in grammars and text-books; a study of the forms and functions of the *qui*-clause.

One session weekly of two hours' length which may be extended to three hours.

[Friday, 3 P. M., 21 Phelps Hall.]

Professor OERTEL :—

- *37 *Practice in Writing Latin Prose (Advanced course).* 2 hrs.

A study of Cicero's *Laelius* from the stylistic point of view. M. Seyffert's edition (2d ed. revised by C. F. W. Müller, Leipzig, 1876) is recommended. Exercises in translation and free composition. Students should provide themselves with H. Menge's *Repetitorium der Lateinischen Syntax und Stylistik* (7th ed., 1900) and his *Kurzgefasste Synonymik* (4th ed.).

Dr. KELLOGG :—

*38 *Latin Composition.* 2 hrs.

An elementary course in writing Latin, connecting the special course of Freshman year with course 37.

Exercises in narration and description, together with practice in idioms based on Meissner's *Latin Phrase-Book*, translated by H. W. Auden, Macmillan & Co., 1895.

[Monday and Friday, 3.00 P. M., 18 Phelps Hall.]

COURSES IN SPECIAL SUBJECTS.

Professor LANG :—

39 *Low Latin.* 1 hr.

The aim of this course is to give an historical account of the popular speech of Rome and of the Roman provinces, and also an outline of its grammar and syntax, as it is disclosed to us by classical Latin, the testimony of the Latin grammarians, inscriptions, medieval documents, and the consensus of the Romance languages.

The course is taken up with lectures on the history and the grammar of Low Latin and the reading of a Low Latin text. For the present the following is used: P. Geyer, *Itinera hierosolymitana saeculi iii-viii* (vol. 39 of *Corpus Scriptorum Ecclesiasticorum Latinorum*), Vienna, 1898. Students should come provided at the beginning with E. Gorra's *Lingue neolatine* (Milano, Hoepli, 1894). Students who wish to take this course must have a good training in Greek and Latin, and at least a reading knowledge of French or Italian.

[Tuesday, 8.30 A. M., K, O.]

Assistant Professor INGERSOLL :—

[*40 *Roman Law.* 2 hrs.

An elementary and general course, for the classical student or the student of law.

Omitted in 1902-1903.]

Mr. C. U. CLARK :— 2 hrs.

41 *Introduction to Text Criticism.*

Reconstruction of the text of Ammianus Marcellinus in the light of Wilhelm Meyer's Law and on the basis of new collations. Students will provide themselves with either Eysenhardt's (Berlin, 1871) or Gardthausen's (Berlin, 1875) edition.

- *42 *Latin Palaeography.* 2 hrs.

Facility in reading and dating MSS. is acquired by systematic study of the rich University collection of facsimiles. The origin and the bearing upon text criticism of MS. errors are constantly observed. The development of late Latin and Medieval literatures is taken up in detail.

CLASSICAL ARCHAEOLOGY

Dr. Heermance will be absent for the year. His courses will be given by Dr. Baur.

Professor PECK :—

- *43 *Introduction to Roman Archaeology.* 2 hrs.

This course, dealing with the material development of Rome, will include such subjects as the physical peculiarities of Latium, the situation and topography of Rome, the Forum and imperial Fora, temples, tombs, arches and other monuments, roads, money.

Special topics will be assigned to the class for investigation and report.

[Wednesday, 9.30–11.20 A. M., 21 Phelps Hall.]

- *44 *Latin Inscriptions.*

Such inscriptions will be studied as illustrate the history of the Latin language and Roman private antiquities.

[Tuesday and Thursday, 11.30–12.20 A. M., 21 Phelps Hall.]

Professor PERRIN :—

- *45 *Outline Survey of Ancient History.* 1 hr.

Lectures, based on manual study, outlining and emphasizing such general features of ancient history as are most valuable for the intelligent prosecution of medieval history. Oriental history is presented only as background and source for Greek and Roman history.

[Wednesday, 8.30 A. M.]

Dr. BAUR [Dr. HEERMANCE] :—

- 46 *Greek Art—I. Sculpture.* 2 hrs.

Lectures and quizzes by the instructor. Special study of the literary sources by the students. If time permits, an outline of Roman historical sculpture will be given.

- [47 *Greek Art—II. The Lesser Arts.* 2 hrs.,
Omitted in 1902-1903.]

- *48 *Greek and Roman Architecture.* 2 hrs.

A systematic study of (a) the methods of construction in Greece and Italy, (b) the types of buildings and their development, and (c) the architectural members and details.

[Monday and Friday, 2.00 P. M.]

- 49 *Archaeological Exercises.* 1 hr.

Exercises in the interpretation of archaeological monuments, as illustrating classic life and literature. The monuments will be selected largely with reference to the courses offered in Greek and Latin authors. No preparation is required.

- 50 *Topography and Monuments of Athens.* 2 hrs.

A combination of the historical and the strictly topographical methods of treatment will be adopted. Those who intend to take this course should provide themselves with the Teubner text of *Pausanias*.

INDO-IRANIAN PHILOLOGY

Professor HOPKINS :—

- *51 *Elementary Sanskrit.* 2 hrs.

Instruction in Sanskrit, beginning with Whitney's *Sanskrit Grammar*, and passing on to Lanman's *Reader*.

The elementary course in Sanskrit is designed especially for classical students, but it may be taken with profit by students of German or English, especially by those who intend to become teachers, and it is indispensable for those who pursue studies in the comparative grammar of Greek and Latin. The course is continued through the year, the first term being devoted mainly to the grammar, the second to interpretation. By the end of the year the student will have read portions of the classical and Vedic selections in Lanman's *Reader*, and be fitted to pursue the work of the advanced course in the following year. On the other hand, he will have attained such familiar acquaintance with San-

skrit grammatical forms and syntactical structure, as greatly to aid his comprehension of parallel phenomena in other Aryan languages.

[Tuesday and Thursday, 3.00 P. M.]

52 *Advanced Sanskrit.* 2 hrs.

Selections from the Rig-Veda and Brahmanic texts.

This course is intended for those that have had already at least one year's instruction in Sanskrit. It is addressed particularly to students of literature, social institutions, and religion. The first half of the year will be occupied with reading selections from the Vedic Hymns, which are not only a priceless heirloom of early religious thought, but also a mine of information in regard to early institutions. The special topic of the second term's reading will be the philosophical portions of the first Brahmanic works and Upanishads, the earliest Aryan prose.

[Tuesday and Thursday, 4.00 P. M.]

53 *History of Sanskrit Literature.* 2 hrs.

This course consists in a review of Vedic and classical Sanskrit literature from the earliest times to the Puranic period, with extracts to illustrate the various phases of literary development. As it is expected that those who take this course will ordinarily have some knowledge of Sanskrit, the translation is made with reference to these students especially, and they are provided as far as possible with the original texts, as read from day to day. In this way this course forms also a reading-exercise parallel to that in Advanced Sanskrit.

[Wednesday, 3.00 P. M.]

54 *Avestan Language and Literature.* 1 hr.

Intended for those who desire to begin the study of Zoroaster's scriptures, the so-called Zend-Avesta. Avestan, or Zend, is easy for advanced Sanskrit students, and besides offering much of interest in respect of literature and religion, is also valuable to students of linguistics and syntax.

[Wednesday, 4.00 P. M.]

55 *Comparative Religion.* 1 hr. 1st term.

A course of twelve lectures in the first term. These lectures take up the study of religion from the comparative point of view, treating of the underlying principles of religion as shown in the religious phenomena of different nations and races, from lower

to higher forms of religious expression. They are open to all graduate students, members of the theological school, and of the Junior and Senior classes of the college.

[Friday, 3.00-4.00 P. M.]

COMPARATIVE GRAMMAR, PHONETICS, AND LINGUISTICS

Professor HOPKINS :—

*56 *Introduction to Comparative Syntax.* 1 hr.

This course consists in an analysis of the syntactical facts presented by the Aryan languages, particularly Sanskrit, Greek, Latin, and early German. It is intended especially for students of these languages who desire a more thorough acquaintance with the problems of comparative syntax. To solve these problems a knowledge, if not of the Sanskrit language, at least of Sanskrit syntactical phenomena is necessary, and the lectures are accordingly planned with a view to explain these phenomena to those who have not studied Sanskrit as well as to those who have done so.

[Monday, 3.00 P. M.]

Professor OERTEL :—

57 *Twelve Lectures on Indo-European Phonology.*

These lectures (three times a week during the first four weeks of the first term) are intended to present in rough outlines the most important facts of Indo-European phonology (viz: the vowel-system, strengthening and weakening, ablaut, the gutturals, and accent) and to introduce the student to the more important literature on these subjects. The lectures are mainly intended for those who are taking courses in historical grammar of either the classical or the modern languages. They should be supplemented by collateral reading in Bechtel's *Hauptprobleme der indogermanischen Lautlehre* (1892), and Hirt's *Der indogermanische Akzent* (1895) and *Der indogermanische Ablaut* (1900).

58 *Phonetics.* 1 hr.

A general introduction to Phonetics based on a study of the English, French, and German sound-systems. The course is intended to furnish a basis both for the study of the phonology and for the practical teaching of the various languages.

Sweet's *Primer of Phonetics* (1890), Vietor's *Elemente der Phonetik* (3d ed., 1898) and Sievers' *Grundsätze der Phonetik* (4th ed., 1893) should be in the hands of the student. Storm's *Englische Philologie* (2d ed., 1896), Bremer's *Deutsche Phonetik* (1893), Laura Soames's *Introduction to Phonetics* (ed. by Vietor, 1900), Passy's *Les Sons du Français* (4th ed., 1897) and Rousselot's *Les Modifications phonétiques* (1891) will be constantly referred to for collateral reading.

The Psychological Laboratory offers to advanced students every facility and all necessary apparatus for the experimental investigation of phonetic problems. See course I, 9.

Attention is called to the practical exercises in French pronunciation given by Mr. Clarke (V, 12). A similar practical exercise in German pronunciation may be given if desired by a sufficient number of students.

59 *Linguistics.*

2 hrs.

An introduction to the scientific study of linguistic development. The course, which is general in its character, is intended for all students, of the classics as well as of the modern languages, who wish to become acquainted with the general principles and chief problems of linguistic science, modern methods of research, the tendencies of recent investigations, the nature of linguistic phenomena, etc. After briefly discussing the topics treated in the instructor's *Lectures on the Study of Language* (New York, Scribner's Sons, 1901), the more important types of language-structure, together with the fundamental facts of syntax and the problem of the origin and rise of language, will be taken up. In connection with this, selected chapters of Paul's *Prinzipien der Sprachgeschichte*, 3d ed., 1898, and of Wundt's *Völkerpsychologie*, Band I: Die Sprache (2 vols., 1900) will be critically examined. Stress will be laid on the psychological aspect of linguistic phenomena and on familiarizing the student with the more recent literature. No knowledge of Sanskrit is necessary for this course.

V. MODERN LANGUAGES AND LITERATURES

THOMAS R. LOUNSBURY, L.H.D., LL.D.	HENRY A. BEERS, M.A.
ALBERT S. COOK, Ph.D., L.H.D.	HENRY R. LANG, Ph.D.
ARTHUR H. PALMER, M.A.	FRED'K M. WARREN, Ph.D.
GUSTAV GRUENER, Ph.D.	CHARLTON M. LEWIS, Ph.D.
ROBERT N. CORWIN, Ph.D.	WILLIAM L. PHELPS, Ph.D.
WILBUR L. CROSS, Ph.D.	CHARLES S. BALDWIN, Ph.D.
CHARLES G. OSGOOD, Ph.D.	ROBERT L. SANDERSON.
CHARLES C. CLARKE, JR., B.A.	KENNETH MCKENZIE, Ph.D.
CLYDE C. GLASCOCK, Ph.D.	WM. O. FARNSWORTH, M.A.
RUDOLPH SCHWILL, Ph.D.	JOHN C. ADAMS, B.A.

As auxiliary to the regular courses in modern languages and literatures, three clubs hold regular sessions throughout the year. These are The MODERN LANGUAGE CLUB, The ENGLISH CLUB, and The GERMAN JOURNAL CLUB. The first two in particular aim to deal with subjects not too technical in character, and thus to promote a sense of comity among all the workers in the same field.

The MODERN LANGUAGE CLUB, formed of instructors and students in the departments of English, Romance Languages, and German, holds its regular meetings on the second Saturday evening of each month for the reading and discussion of original papers, and for reports of progress in the field of these studies.

The ENGLISH CLUB, to which are invited all persons, whether members of the University or not, who are interested in the study or teaching of the English language or literature, meets on alternate Monday evenings to listen to the presentation of some topic, and engage in the informal discussion of it. The club never remains in session over an hour, and thus opportunity is afforded for keeping other engagements the same evening.

The GERMAN JOURNAL CLUB has for its object the presentation of reports on the most interesting periodicals published in German, and devoted to the science of Germanic philology.

The GERMAN SEMINARY ROOM in Fayerweather Hall, where the Club meets, contains a small working library for the use of advanced students in the Germanic languages. It also serves as a general study and working room for such students.

The UNIVERSITY LECTURES ON LITERATURE, inaugurated two years ago, were conceived with a view to promoting community of effort among the various philological departments of the University, with especial reference to the broad and illuminative treatment of important literary themes, such as might be welcome to all serious students of literature among us.

The ENGLISH SEMINARY ROOM, at 135 Elm st., which has lately been enlarged for the better accommodation of graduate students in English, contains the nucleus of a working library. This room is general headquarters for the graduate students in English, and serves for the meetings of the English Club, and for similar purposes.

ROMANCE LANGUAGES

Professor LANG :—

1 *Low Latin.*

[See Classical Philology IV, 42.]

FRENCH

2 *Old French.*

2 hrs.

Introduction to the study of Old French language and literature in general, followed by a more especial study of Anglo-Norman. G. Paris's *Extraits de la Chanson de Roland* (6^{me} éd. Paris, 1899), and the same author's *La littérature française au moyen-âge* (Paris, 1888) will be used.

Professor WARREN :—

3 *The Arthurian Epic.*

2 hrs.

Lectures on the medieval French poems which relate to Arthur and the Round Table.

- *4 *French Literature of the Seventeenth Century.* 2 hrs.

Study of Corneille, Molière and Racine. Selections from Descartes, Pascal, Bossuet, La Bruyère and other prose writers.
[Monday and Friday, 11.30, D₁ O.]

- *5 *French Literature of the Sixteenth Century.* 1 hr.

Based on Darmesteter and Hatzfeld: *Le Seizième Siècle en France*.
[Monday, 10.30 A. M., D₁ O.]

- *6 *Realists and Naturalists.* 1 hr.

Lectures on the modern Realistic School of France.
[Tuesday, 11.30 A. M., D₁ O.]

Assistant Professor SANDERSON :—

- 7 *Teacher's Course in French.* 1 hr.

A course for the discussion of topics of interest to teachers of French—questions of syntax, pronunciation, methods of teaching, choice of texts, etc.

- *8 *French Literature of the Nineteenth Century.* 2 hrs.

Study of representative works beginning with V. Hugo and the French Romanticists and reaching as near the present day as time will allow. The reading will be in such order, and accompanied by such comments and lectures, as may give a clear view of French literary thought in the nineteenth century. The course may be conducted in French.
[Tuesday and Thursday, 11.30, E₁ O.]

- *9 *General View of French Literature.* 3 hrs.

This course, intended to impart a command of the language as well as a knowledge of the literature, will be conducted in French. Masterpieces of literature from the sixteenth century to the present day are read.
[Monday, Wednesday, Friday, 11.30, E₁ O.]

- *10 *Molière.* 1 hr.

A linguistic and literary study of such plays as *le Misanthrope*, *le Tartuffe* and *les Femmes Savantes*. The course may be conducted in French.
[Saturday, 9.30, D₁ O.]

Mr. FARNSWORTH.

- 11 *Development of Literary Criticism in France.* 1 hr.

A survey of criticism from the Renaissance to the present time. Boileau, Voltaire, Mme. de Staël, Sainte-Beuve, Taine, and others will be studied in their relation to groups. Collateral reading will be required.

PHONETICS

Mr. CLARKE :—

- 12 *Phonetics of Modern French.* 1 hr.

Lectures, with exercises, on the phonetics of French as it is spoken to-day, based on personal observation, supported by the recent publications of Rousselot and Paul Passy.

Incidentally, attention will be directed to the history of French pronunciation since the fifteenth century, in so far as it serves to explain present peculiarities.

The course is offered to such graduate students and others as can read French fluently and have some knowledge of general phonetics. It will be a practical application of the science, and is intended to be of especial value to teachers and those who are making a serious study of the French language.

See also courses in Phonetics and Linguistics, IV, 58, 59.

PROVENÇAL

Professor LANG :—

- 13 *Provençal Language and Literature.* 2 hrs.

This course begins with lectures on the historical grammar of old Provençal, after which the origin and growth of Provençal lyric poetry, its style and metre, are studied in connection with the reading of selections from the works of the Troubadours. Students will provide themselves from the beginning with Appel's *Provenzalische Chrestomathie* (Leipzig, 1895), and Restori's *Histoire de la littérature provençale* (Montpellier, 1894).

- 14 *Seminary Course in Romance Languages and Literatures.* 2 hrs.

This course is designed to give competent students opportunity and guidance in original research.

During the coming year, the work in this course will center on the study of the origin and the development of medieval lyric poetry in Provence and France as well as in the other Romance countries.

SPANISH

Professor LANG and Dr. SCHWILL :—

- *15 *Spanish (Elementary Course).* 3 hrs.

In this course, stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge of the language. Knapp's *Spanish Grammar*, and Alarcon's *El Capitan Veneno* will be used as text-books.

[Monday, Wednesday, Friday, 9.30 A. M., K, O.]

Professor LANG :—

- *16 *Spanish Prose of the Nineteenth Century.* 2 hrs.

The object of this course is to give the student fluency in reading. In addition to the reading done in the class-room, a number of texts will be assigned for private study. The following will be among the works to be read : Perez Galdos, *Doña Perfecta* ; Fernan Caballero, *La Gaviota* ; Alarcon, *El Escándalo* ; Valdés, *La Alegria del Capitan Ribot* ; Coloma, *Pequeñeces* ; Juan Valera, *A Vuela Pluma. Artículos literarios y políticos.*

[Tuesday and Thursday, 9.30 A. M., K, O.]

Dr. SCHWILL :—

- *17 *Reading and Composition in Spanish.* 2 hrs.

This course is designed for those requiring the use of Spanish for commercial purposes. The writing of letters and the reading of commercial papers will be especially considered. Open to students who have taken A 1.

- *18 *Spanish Prose of the Sixteenth and Seventeenth Centuries.* 2 hrs.

This course is open only to students who have taken course *16, or who shall satisfy the instructor as to their fitness to take it by passing a special examination. *Lazarillo de Tormes*, Cervantes' *Don Quijote* and *Novelas Ejemplares* will be read in class, while other works will be assigned for private study.

[Tuesday and Thursday, 10.30 A. M., K, O.]

Dr. SCHWILL :—

19 *The Spanish Drama of the Sixteenth and Seventeenth Centuries.* 2 hrs.

This course will consist of lectures in connection with the reading in class of selected plays by Lope de Vega, Tirso de Molina, Calderon, etc. Work will be assigned for reports to be made in class. Open to students who have had two years of Spanish or its equivalent.

[Monday, Friday, 11.30 A. M.]

20 *Beginnings of Spanish Literature.* 1 hr.

This course comprises a study of the early literature of Castile previous to the fifteenth century, and its relations with the literatures of France and Italy. Gorra's *Lingua e letteratura spagnuola delle origini* will be used as introduction to the work.

[Saturday, 8.30 A. M., K. O.]

ITALIAN

Dr. MCKENZIE :—

*20 *Italian (Elementary Course).* 3 hrs.

This course is open to those who have studied French for at least two years, or who shall otherwise satisfy the instructor of their fitness to take Italian. Stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge.

Grandgent's *Italian Grammar* and *Italian Composition*; comedies by Goldoni; selections from Manzoni, E. de Amicis, and other authors.

[Tuesday, Thursday, Saturday, 9.30 A. M.]

*21 *Dante's Life and Works.* 2 hrs.

This is a strictly literary course, open only to those who have passed through course 20, or who shall otherwise satisfy the instructor of their fitness to take it. After some introductory lectures on Italian poetry previous to Dante, and its relations to the literature of Provence and of France, the *Vita Nuova* and selections from the *Divina Commedia* will be read and explained.

Students will provide themselves with Casini's edition of *La Vita Nuova* (2d ediz., Firenze, 1891), Fraticelli's edition of *La Divina Commedia* (Firenze, 1898), and Gardner's *Dante* (Temple Series), 1900.

[Tuesday, Thursday, 11.30 A. M.]

22 *Petrarch and Boccaccio.* 2 hrs.

A study of the Italian writings of Petrarch and Boccaccio, and their influence on the humanistic movement. Rigutini's *Le Rime di Francesco Petrarca* (Milano, Hoepli, 1896); Fornaciari's *Novelle scelte dal Decamerone di G. Boccaccio* (Firenze, Sansoni, 1889).

[23 *Italian Literature of the Thirteenth Century.* 1 hr.

Reading of texts, with reference both to their literary qualities and to the history of the language. Particular attention will be paid to the early lyric poetry of Italy and its relation to the poetry of Provence.

Monaci's *Crestomazia italiana dei primi secoli*; Casini, *Forme metriche italiane*.

Omitted in 1902-1903.]

[24 *Fable-literature in the Middle Ages.* 1 hr.

Study of the history of Æsopic fables from ancient times to the present, with special reference to the medieval French and Italian collections; the relation between the fables and the beast-epic. Lectures, reading, reports on assigned topics.

Omitted in 1902-1903.]

RUSSIAN

[25 *Elementary Russian.* 3 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

Omitted in 1902-1903.]

[26 *Advanced Russian.* 3 hrs.

A general course in Russian literature in connection with the reading of a historical chrestomathy and the detailed study of a few important works.

Omitted in 1902-1903.]

GERMANIC LANGUAGES

GERMAN

Professor PALMER :—

[28 *Introduction to Germanic Philology.* 2 hrs.

A course introductory to the general study of Germanic philology, dealing with its history, methods, fields, and funda-

mental facts. The basis of the work is Paul's *Grundriss der Germanischen Philologie*, of which portions are read, discussed, and supplemented by informal lectures.

Omitted in 1902-1903.]

- 29 *Gothic.* 2 hrs.

An introductory course, especially for those who intend to study German or English historically, in the study of Gothic and its phonological relations to both earlier Indo-Germanic and later Germanic languages. Braune's *Gotische Grammatik* or Streitberg's *Gotisches Elementarbuch*, Heyne's *Ulfilas*, Streitberg's *Urgermanische Grammatik* or Dieter's *Altgermanische Dialekte*, and Henry's *Comparative Grammar of English and German*.

- 30 *Early Dramatic Literature of Germany.* 3 hrs.

Studies in the origins and earliest history of the drama in Germany.

- *31 *Goethe, Life, Shorter Poems and Faust.* 2 hrs.

Together with outline study of Goethe's life a large number of his shorter poems will be read in chronological order, and then particular attention given to the translation and interpretation of Faust (both parts).

[Tuesday and Thursday, 8.30 A. M., F, O.]

- *32 *Goethe, Prose Works.* 1 hr.

Reading and discussion of Goethe's more important prose works and utterances in letters, journals and conversations.

[Saturday, 8.30 A.M., F, O.]

- [*33 *History of German Literature, 1624-1832.* 2 hrs.

The development of German literature will be studied from the time of Opitz to Goethe's death. The text-books will be: Kluge's *Geschichte der Deutschen National-Litteratur*, Scherer's *History of German Literature*, Max Muller's *German Classics*, and Hillebrand's *German Thought from the Seven Years' War to Goethe's Death*.

Omitted in 1902-1903.]

Professor GRUENER :—

- 34 *Middle High German.* 3 hrs.

Hartmann: *Der Arme Heinrich* and *Iwein*. *Nibelungenlied*. Selected poems of Walther von der Vogelweide. Selections from Wolfram von Eschenbach's *Parzival*. Lectures and papers.

- [35 *German Literature of the Reformation Period (1500–1624).* 3 hrs.

The development of German literature is studied from the beginning of the Reformation to the time of Opitz. Characteristic works of the important writers of the period are read, chiefly for literary purposes, though also with reference to the political, social, and religious conditions of the times.

Omitted in 1902–1903.]

- *36 *Schiller, Works and Life.* 2 hrs.

Rapid reading of plays, poems, and prose writings of Schiller, with study of his life. The object of this course is to acquaint the student more fully with the vocabulary and style of standard German literature, and to present Schiller's character and influence as a writer and thinker.

[Tuesday and Thursday, 10.30 A. M.]

Professor CORWIN :—

- [37 *Old High German.* 3 hrs.

A rather detailed course in the oldest High German dialects and literature. Braune's *Althochdeutsche Grammatik* and *Althochdeutsches Lesebuch*, and the collateral literature for reference.

Omitted in 1902–1903.]

- 38 *History of New High German.* 2 hrs.

The earlier periods of the language will first be surveyed, for the purpose of gaining a comprehensive idea of the chief linguistic phenomena and their causes. Upon this basis a more special study will be made of the origin and development of New High German.

Dr. GLASCOCK :—

- 39 *Phonetics of Modern German.* 1 hr.

During the first half-year a course of lectures and practical exercises in phonetics will be given, the primary object of which will be scientific knowledge of the processes involved in the correct pronunciation of modern German.

- 40 '*Storm and Stress*' in German Literature. 1 hr.

The period in German literature known as *Sturm und Drang*, its origin, and its relation to early Romanticism, will be studied

A course of lectures will be given, and selections will be read from Klinger, Leisewitz, Wagner, Lenz, Maler Müller, Schubart, and, perhaps, Goethe and Schiller. The text-books will be *Stürmer und Dränger*, *Deutsche National-literatur*, hrsg. von J. Kürschner, Bände 79-81, Stuttgart.

SCANDINAVIAN

Professor PALMER :—

- 41 *Old Norse (Icelandic)*. 3 hrs.
Grammar, and reading in the Sagas and the Elder Edda.

————— :—

- 42 *Norwegian and Danish*. 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

- [43 *Swedish*. 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

Omitted in 1902-1903.]

ENGLISH

Professor LOUNSBURY :—

- 44 *The Early Victorian Era: Tennyson and his Contemporaries*. 2 hrs.

Professor BEERS :—

- *45 *Milton and his Contemporaries*. 2 hrs.

The subject will be treated with special reference to the political and religious conflict of the times. All of Milton's English verse will be read, a few of his Latin poems, and much of his prose. The work of the Church poets and Cavaliers will be examined, as also various diaries and memoirs, and portions of the writings of Fuller, Clarendon, Butler, Marvell, Bunyan, etc.

- *46 *Medieval Allegory.* 2 hrs.

The *Purgatory of Dante*, the *Romaunt of the Rose* and a portion of *Piers Plowman* will be read in class, together with other texts illustrative of the subject. A fair reading knowledge of Italian is required of students electing this course.

Professor COOK :—

The strictly graduate courses offered below are given according to circumstances and the needs of the graduate students actually in attendance; and special attention is given to the supervision of individual research in any part of the general field.

- 47 *Encyclopaedia and Methodology of English.* 2 hrs.

This course is designed to acquaint the student with philological principles in general, with the more important branches of scholarship relative to the English language and literature, with a few of the representative books in each of these branches, and with the scope and method of research in this department.

[Wednesday, 4.00 P. M., 135 Elm st.]

- 48 *Theories of Poetry.* 2 hrs.

A course in the theories of poetry in general, and in the principles of criticism applicable to its various departments, as the epic, dramatic, and lyric. Discussions and papers on the basis of standard works, such as Aristotle's *Poetics*, Sidney's *Defense of Poesy*, Woodbridge's *The Drama*, Boileau's *Art of Poetry*, Lessing's *Laokoon*, and others of similar character. Reading of masterpieces to illustrate and extend the principles derived from theoretic works.

[Wednesday, 3.00 P. M., 135 Elm st.]

- 49 *Dante in English.* 2 hrs.

A course primarily in the *Divina Commedia* and the *Vita Nuova*, though selections from the other works are also read. Two or three of the best English translations are employed, together with such reference books as may be necessary. Much attention is bestowed upon the historical and literary background of the poet and his works.

[Tuesday, 3.00 P. M., 135 Elm st.]

50 *Advanced Old English.* 2 hrs.

Selected works read especially with reference to the acquisition of scholarly methods. The course this year begins with the study of Cook's edition of Cynewulf's *Christ*.

[Thursday, 11.30 A. M., 135 Elm st.]

51 *Seminary in English Literature.* 3 hrs.

A critical study of some representative writer or department of literature. In 1894-95, Ben Jonson was selected; in 1895-96, Browning; in 1896-97, Chaucer; in 1897-98, the Jacobean Drama; in 1898-99, Spenser; in 1899-1900, 1900-1901, and 1901-1902, Chaucer.

[Alternate Mondays, 7.00 P. M., 135 Elm st.]

52 *Historical English Prosody.* 2 hrs.

A brief consideration of metres in the related languages, followed by an outline of the subject traced from the Old English period to the present day.

[Tuesday, 11.30 A. M., 135 Elm st.]

53 *Old and Middle English.* 2 hrs.

An elementary course in the beginnings and earlier development of the English language and literature. Reading is begun at the earliest practicable moment, and the study is made as literary in character as is consistent with a thorough grounding in the rudiments of the language. This course, while it is indispensable to all graduate students and future teachers of English, and will also be of service to students of English history and of the English Bible, is designed as well for those who, in the pursuit of general culture, are unwilling to remain ignorant of the foundations of the English language and literature.

[Tuesday and Thursday, 10.30 A. M., C₁ O.]

Professor LEWIS:—

[54 *Verse Composition.* 1 hr.

After a few introductory lectures on the principles of English versification, the student will begin weekly or fortnightly practice in composition, with regular appointments for consultation and criticism. The purpose of this course is partly to familiarize the student with the chief varieties of English verse and stanza (such as blank verse, heroic verse, the sonnet, etc.), and partly to give him the added command of language that results from practice in difficult forms.

Omitted in 1902-1903.]

- 55 *Shakspeare.* 2 hrs.

A minute study of three or four of the greater plays, such as *Macbeth*, *King Lear*, *Hamlet*. Critical examination of the text, and of the work of the leading commentators, and investigation of dates and sources.

Professor PHELPS :—

- 56 *Elizabethan Literature.* 2 hrs.

Studies in the poetry and prose of the Elizabethan period, exclusive of the drama. Wyatt, Surrey, Ascham, Foxe, Painter, Lyly, Raleigh, Greene, Nash, Lodge, Marlowe, Hooker, Sidney, Spenser, Shakspeare, Davies, Drayton, Chapman, and others. Lectures, discussions, and preparation of special papers by members of the class.

[Thursday, 3 P. M.]

- 57 *English Literature of the Seventeenth Century.* 2 hrs.

A rather minute study of English poetry and prose from Donne to Dryden. The poetry of Donne, Drummond, Herbert, Crashaw, Vaughan, Quarles, Carew, Suckling, Herrick, Cowley, Milton, Waller, Marvell, Butler, and Dryden is read; also the prose of Burton, Browne, Taylor, Pepys, Fuller, Walton, Clarendon, Milton, Bunyan, and Dryden. The social life of the times is discussed.

[Tuesday and Thursday, 12.30 P. M.]

- *58 *Tennyson and Browning.* 2 hrs.

The autumn term will be occupied with the study of Tennyson. Practically all of his poetry will be read. His theory of the poet's art, his skill in technique, his artistic expression, and his representation of nineteenth century ideas, will be studied in detail.

After Christmas, the complete works of Browning will be taken up, only those being omitted which are unnecessary in forming a general estimate of his work as a poet. His personal force, his growth, his attitude toward his art, and his place in nineteenth century poetry will be considered; but the chief attention will be paid to his analysis of human life and character.

The instruction in this course will be by means of recitations, discussions, and the preparation of short special papers by the students.

[Wednesday and Friday, 8.30 A. M.]

Professor CROSS :—

- 59 *English Prose Fiction.* 1 hr.

The period covered by this course varies from year to year. For 1902-3, the subject will be phases of the novel during the nineteenth century, from Scott to the present time.

[Thursday, 2.00 P. M., 20 South Sheffield Hall.]

- 60 *Romantic Verse since 1850.* 1 hr.

This course deals mainly with the so-called Pre-Raphaelites, as Dante Gabriel Rossetti and William Morris. These and other poets are studied in connection with the medieval romances from which they drew. The work thus includes literary history and a study of sources.

[Tuesday, 2.00 P. M., 20 South Sheffield Hall.]

Assistant Professor BALDWIN :—

- *61 *Rhetoric (six essays in criticism).* 1 hr.

Lectures and reports on essayists and reviewers; regular appointments for criticism.

[Hour to be arranged.]

- [62 *The Transition Period* (after 53 or its equivalent). 1 hr.

Studies in fifteenth century English language and literature; the development of prose in syntax and style (Pecock, Malory, More, Fortescue, Caxton, the Paston letters); the Chaucerian tradition in poetry; the ballads; the passing of romance.

Omitted in 1902-1903.]

Dr. OSGOOD :—

- 63 *Middle English Romances.* 1 hr.

A study of the various groups of romances based upon Billings' *Guide to Middle English Metrical Romances*, supplemented in some cases by other outlines. The work will consist in part of the detailed study of two or three texts in the best editions, such as Hall's *King Horn*, Hausknecht's *Floris and Blanchefleur*, and Kölbing's *Amis and Amiloun*. This will be supplemented by more extended reading in the romances and elsewhere for the purpose of obtaining a general survey of the subject.

[Monday, 9.30 A. M.]

Mr. J. C. ADAMS :—

*64 *English Literary Criticism.* 2 hrs.

An historical survey of literary criticism in England since the middle of the sixteenth century. The course aims to define and illustrate the varying ideals that have successively prevailed in critical theory and practice from Ascham to Pater. Among the authors to be read are Ascham, Sidney, Puttenham, Jonson, Rymer, Dryden, Pope, Addison, the Wartons, Johnson, Jeffrey, Wordsworth, Coleridge, Hazlitt, Lamb, Arnold, and Pater. Lectures, reports, and discussion of the assigned reading, and individual investigation by members of the class.

THE USE OF THE LIBRARY

Mr. KEOGH :—

Bibliography.

Ten lectures on certain practical aspects of bibliography. Discussion of general reference books ; the means of finding what has been published on a subject ; the reviewing of books ; the classification and cataloguing of libraries ; the taking and filing of notes and references ; the compilation of bibliographies ; the making of indexes ; the printing of theses ; the law of copyright.

VI. PHYSICAL AND NATURAL SCIENCE

WILLIAM H. BREWER, Ph.D.	ARTHUR W. WRIGHT, Ph.D.
SIDNEY I. SMITH, M.A.	ADDISON E. VERRILL, M.A.
HENRY S. WILLIAMS, Ph.D.	WILLIAM G. MIXTER, M.A.
CHARLES S. HASTINGS, Ph.D.	EDWARD S. DANA, Ph.D.
RUSSELL H. CHITTENDEN, Ph.D.	FRANK A. GOOCH, Ph.D.
HORACE L. WELLS, M.A.	LOUIS V. PIRSSON, Ph.B.
SAMUEL L. PENFIELD, M.A.	CHARLES E. BEECHER, Ph.D.
HARRY B. FERRIS, M.D.	HENRY S. GRAVES, M.A.
PHILIP E. BROWNING, Ph.D.	ALEXANDER W. EVANS, M.D., Ph.D.
LAFAYETTE B. MENDEL, Ph.D.	HENRY L. WHEELER, Ph.D.
JAMES W. TOUMEY, M.S.	HERBERT E. GREGORY, Ph.D.
EDWARD A. BOWERS, B.A.	HARRY W. FOOTE, Ph.D.
WILLIAM J. COMSTOCK, Ph.B.	WESLEY R. COE, Ph.D.
JAMES LOCKE, Ph.D.	ISAAC K. PHELPS, Ph.D.
GEORGE F. EATON, Ph.D.	HENRY H. ROBINSON, Ph.B.
LEONARD M. TARR, M.A.	WILLIAM E. FORD, JR., Ph.B.

A brief outline of the facilities for carrying on researches and experiments in **PHYSICS** is carried on in the Sloane Physical Laboratory, and the Physical Laboratory of the Sheffield Scientific School in Winchester Hall.

The work in **CHEMISTRY** in the Sheffield Chemical Laboratory, and in the Kent Chemical Laboratory.

The work in **MINERALOGY, PETROLOGY, GEOLOGY, PALEONTOLOGY, and ZOOLOGY** in the Peabody Museum of Natural History.

The work in **PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY** in the Sheffield Biological Laboratory.

The work in **COMPARATIVE ANATOMY and GENERAL BIOLOGY** in the Sheffield Biological Laboratory.

The work in **BOTANY** in the Eaton Herbarium, Sheffield Hall.

The work in **FORESTRY** in the Forest School.

The **GEOLOGICAL CLUB** is an association of the instructors and graduate students, for the purpose of encouraging the students to prepare papers, and aid in the discussion of current topics of interest in geological subjects.

The PHYSICS JOURNAL CLUB, open to graduate students in Physics, meets weekly for the review and discussion of the current literature in this department of study.

The PHYSICAL CLUB, organized for study, criticism and discussion, holds fortnightly meetings. Open to graduate and advanced students in Physics.

The KENT LABORATORY JOURNAL CLUB meets fortnightly for the review and discussion of current chemical literature.

The CHEMICAL CLUB, composed of instructors, graduate students, and others interested in chemistry, holds fortnightly meetings for the presentation and discussion of papers and reviews of recent work.

The BIOLOGICAL CLUB, composed of instructors, graduate students, and others instructed in Biology, meets fortnightly for the presentation and discussion of papers and reviews of recent work.

PHYSICS

Professor A. W. WRIGHT :—

- 1 *Physics.* 4 hrs. to count as 2 hrs.

Chiefly practical work in the Sloane Physical Laboratory, with measurements, especially in heat, light, electricity, and magnetism, each exercise occupying two hours. As introductory to the laboratory practice, the exercises during a portion of the first term consist of recitations or discussions upon the theory and methods of physical measurements, the use of instruments, and other special topics. Laboratory facilities are also freely accorded to students of the course at other times than those of the stated exercises.

[Monday and Friday, or Tuesday and Thursday, 9.30-11.20 A. M., Sloane Laboratory.]

- 2 *Physics (Advanced Course).* 4 hrs. to count as 2 hrs.

Practical work in the Sloane Physical Laboratory, with instruction in the principles and methods of physical investigation, the processes and instruments of measurement, and the methods of computing and reducing results of observations. Special

attention is paid to practical measurements in optics, electricity, and magnetism. The student is expected to make original investigations an important part of his work, and has the free use of the laboratory facilities for carrying them on.

For those who have already pursued course 1 or its equivalent.

[Wednesday, 10.30–12.30, and Thursday, 11.30, Sloane Laboratory.]

Professor HASTINGS :—

- 3 *Physics.* 3 hrs. lectures, 6 hrs. laboratory work.

Laboratory work in the Sheffield Physical Laboratory, supplemented by lectures on the theory of observation with the method of least squares, and on the theory of electricity and electrical instruments. The use of the laboratory is at the command of the student at all times.

[Lectures on Monday, Wednesday, and Friday, 12.00 M.]

For courses in Mathematical Physics, see VII.

CHEMISTRY

(COURSES IN THE SHEFFIELD CHEMICAL LABORATORY)

The analytical laboratories of the Sheffield Scientific School are open to students in term time from 9 to 1 and from 2 to 5 o'clock, every week-day except Saturday. The greater part of the instruction is given in the laboratory to each student separately, but the various classes have, in addition, two or more lectures or recitations a week, in connection with the studies pursued in the laboratory.

Professor MIXTER :—

- 4 *Chemical Physics.*

Especially the methods employed in the determination of molecular masses and specific heat.

Professor WELLS :—

- 5 *Qualitative Analysis.* 1st term.

Embraces a study of the commonly occurring elements in their qualitative relations, and includes a systematic course of analysis

for the same. A good knowledge of elementary chemistry is a necessary preparation for this. If desired, the course is extended to include a study of many of the rare elements.

[Laboratory hours: Monday to Friday, 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M. Lectures and recitations: Monday and Tuesday, 3.00 P. M.,—occasionally at 12.00 M.]

6 *Quantitative Analysis.*

This is open only to those who have taken course 5 or its equivalent.

(a) *Gravimetric Analysis.* Second term. Embraces a series of exercises involving a considerable number of important methods.

(b) *Volumetric Analysis.* First term. This follows the gravimetric analysis. It includes the most important and typical methods.

(c) *Ultimate Organic Analysis.* First term.

7 *Inorganic Preparations.* 1st half of 2d term.

A course of laboratory work, with lectures and recitations. About thirty or forty compounds are prepared, which give a variety of important and instructive processes.

8 *Advanced Quantitative Analysis.*

(a) *Metallurgical Chemistry.* The analysis of ores, fuels, fluxes, alloys, metals, and other furnace products.

(b) *Mineralogical Chemistry.* The analysis of minerals for scientific purposes.

Laboratory hours, every week-day (except Saturday), 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M.

9 *Metallurgy and Assaying.* 2d half of 2d term.

A course of recitations and lectures on elementary metallurgy, followed by a short course of demonstrative lectures on gold and silver assaying, with the practical application of assaying to a few typical ores.

10 *Technical Gas-Analysis.* 2d half of 2d term.

A short practical course, including the principal methods.

11 *Sanitary Water-Analysis.* 1st half of 2d term.

A practical course in the chemical examination of drinking-waters. Two exercises of three hours each per week.

12 *Investigations in Inorganic Chemistry.*

Opportunities are offered, to those who have had sufficient preparation, to make researches upon analytical methods, the preparation of chemical compounds, and other scientific problems.

Mr. COMSTOCK :—

13 *Elementary Organic Chemistry.* Both terms.

During the first four weeks of the second term the afternoon exercises are omitted and daily laboratory work substituted, 9.00 A. M. to 1.00 P. M., with occasional lectures at 12.00 M.

[Recitations supplemented by lectures, Thursday and Friday, 5 P. M.]

14 *Organic Chemistry.* 2 hrs. 1st term.

A continuation of the above course. Recitations and lectures, [Monday and Tuesday, 5.00 P. M.]

Assistant Professor H. L. WHEELER :—

15 *Advanced Organic Chemistry.*

This offers an opportunity for more extended study and original investigation to those who have proper preparation.

16 *Organic Preparations.* 2d half of 2d term.

Laboratory work, consisting of five exercises per week of about three hours each, in the preparation of such compounds as will give familiarity with the most important synthetical methods.

Dr. LOCKE :—

17 *The Systematization of Inorganic Compounds.* 1st term.

*18 *Advanced Inorganic Chemistry.* 3 hrs. 1st term.
[See Chemistry, page 98.]

19 *The Application of the Ionic Theory to Analytical Chemistry.* 2 hrs. 1st half 2d term.

Ostwald's *Foundations of Analytical Chemistry* will be followed.

20 *The Constitution of Chemical Compounds.*

2 hrs. 2d half 2d term.

Methods of determination illustrated on typical compounds ; stereochemistry ; double compounds, etc.

Dr. FOOTE:—

- 21 *Physical and Electro Chemistry.* 2d half of 2d term.

A course of lectures on the theory of Physical and Electro Chemistry, one hour weekly.

[Monday, 5.00 P. M.]

- 22 *Physico-Chemical Measurements.* 2d term.

Laboratory practice in the more important methods of Physical Chemistry.

[Monday to Friday, inclusive, 9.30 A. M.—1.00 P. M.]

- 23 *Electrochemistry.* 2d term.

Experimental work in Electrochemistry, including the usual measurements, quantitative electro-analysis, and the synthesis of organic and inorganic compounds.

[Monday to Friday, inclusive, 9.30 A. M.—1.00 P. M.]

(COURSES IN THE KENT LABORATORY)

The Kent Laboratory is open daily from 9.00 A. M. to 1.00 P. M., and from 2.00 to 5.00 P. M., to students who take strictly graduate courses.

Professor GOOCH, Assistant Professor BROWNING, and
Dr. I. K. PHELPS :—

- *24 *Inorganic Chemistry—Experimental and Descriptive.*

3 exercises—6 hrs.

Lectures, laboratory work, and class-room exercises. An introduction to elementary chemical theory, the use of symbols and equations, and the study of the elements and their compounds.

[I, Wednesday and Friday; II, Tuesday and Thursday;
I, II, Monday, 11.30 A. M.—1.20 P. M.]

Assistant Professor BROWNING :—

- *25 *Qualitative Analysis.* 3 exercises—5 hrs.

Laboratory practice in the ordinary processes of qualitative analysis, with lectures.

[Monday and Friday, 8.30–10.20, Wednesday, 8.30–9.20
A. M.]

Professor GOOCH and Dr. I. K. PHELPS :—

*26 *Organic Chemistry.* 3 exercises—5 hrs.

An introduction to the study of the compounds of carbon. Lectures, written exercises, and laboratory work. Open to those who have completed course 41, or its equivalent.

[Monday, 10.30–1.20, and Wednesday and Friday, 10.30–11.20 A. M.]

Professor GOOCH :—

*27 *Quantitative Analysis.* 2 exercises—6 hrs.

Lectures with laboratory practice in the use of the simpler methods of gravimetric and volumetric quantitative analysis.

[Wednesday and Friday, 2.00–4.50 P. M.]

28 *Quantitative Analysis (second course).*

Practice in the more complex processes of gravimetric, volumetric, and electrolytic analysis.

[Hours for consultation fixed by appointment.]

29 *Chemical Theory.* 1 hr.

This course is devoted to the discussion of the general principles and modern theories of chemistry.

[Tuesday, 4.00–4.50 P. M.]

30 *Special Methods.*

Laboratory practice in special methods of analysis and research.

[Hours for consultation fixed by appointment.]

31 *Original Work and Research in Inorganic Chemistry.*

(a) Special problems of *analysis*—either experimental criticism of known processes or constructive work looking towards the development of new methods.

(b) The critical examination of reactions.

[Hours for consultation fixed by appointment.]

Assistant Professor BROWNING :—

32 *The Rare Elements.* 2 exercises—3 hrs.

Lectures with laboratory work covering the principal reactions of the elements not included in the general course. The methods in use for the qualitative and quantitative determination of these elements are carefully studied, and a systematic arrangement developed so far as practicable.

[Monday, 2.00–4.50 P. M.]

33 *Inorganic Preparations.* 2 hrs.

A short course, mainly laboratory work, covering typical methods for the preparation of inorganic salts.

[Thursday, 3.00-4.50 P. M.]

Dr. I. K. PHELPS :—

34 *The Carbon Compounds—Descriptive and Theoretical.* 3 hrs.

A course of lectures treating systematically the more important compounds of carbon and the theories concerning them. An elementary knowledge of organic chemistry is desirable as a preparation.

[Tuesday, Thursday and Saturday, 8.30-9.20 A. M.]

35 *Organic Synthesis.*

Laboratory practice in synthetical processes too long or too complicated to be included in the experimental work of course 43.

[Hours for consultation fixed by appointment.]

MINERALOGY.

Professor PENFIELD :—

36 *Determinative Mineralogy.* 3 hrs.

The object of this course is to gain familiarity with the common minerals together with facility in their identification. The subject is treated mainly from a chemical standpoint, and it is assumed that all who take the course have some familiarity with the principles of elementary chemistry. A portion of the time allotted to the course (about one quarter) is devoted to the study of simple chemical reactions performed both in the dry way with the aid of the blowpipe and in the wet way with reagents, and such tests are subsequently made the basis of the determination of mineral species. Thus the continued application of simple chemical tests to the study of minerals gives a most valuable practical training in chemistry and serves to supplement other courses in that subject. The course is carried on in a well-equipped laboratory containing the following collections, which are at all times accessible to the students ; (1) unlabeled collection of minerals for identification by means of blowpipe, chemical and physical tests ; (2) labeled collection of typical mineral specimens for

comparison and study ; (3) unlabeled collection of minerals, especially well crystallized specimens, for practice in sight identification ; (4) labeled and unlabeled rock, gangue, vein and ore specimens for training in the identification of minerals such as may be encountered in the field ; (5) collection of crystal models, for although, owing to lack of time, crystallography is not taken up in this elementary course, much information concerning this important subject may be gained by those who wish to pay some attention to it. In addition to the collections mentioned, the laboratory is equipped with all needed appliances for the study of the chemical and physical properties of minerals. The time required for the elementary course is about 72 hours, and it is supposed that in this time students will have determined and studied fifty minerals, selected for illustrating the following features :—the important chemical types of mineral compounds ; the important economic minerals, those used as ores, etc. ; the minerals important from a geological standpoint. The laboratory is open daily from 9-1 and (Saturdays excepted) from 2-5, and by devoting more than the allotted time to the subject the course may be extended to any desired extent.

[Wednesday, 2.00-5.00 P. M., or Saturday, 9.00 A. M.-12.00 M.]

37 *Crystallography and Descriptive Mineralogy.*

2 hrs. 1st half of 2d term, 3 hrs. 2d half of 2d term.

These two subjects are treated together, a group or class of crystals being first studied and then the mineral compounds belonging to that class. Instruction is given by means of lectures and practical demonstrations, the varieties of form and development of crystals being illustrated by means of glass and wooden models and a collection of natural crystals, while in descriptive mineralogy specimens from the valuable and extensive Brush Collection are studied. In descriptive mineralogy special stress is laid upon the chemical and crystallographic classification of species and upon the study of those minerals which are important from an economic or geological standpoint.

For the benefit of those who can devote but one hour a week to these subjects a course similar to the above, but necessarily abridged, is given each year, it being supposed that those who take the shortened course will be able to supplement it by reading and study so as to make it practically an equivalent to the longer one.

[Monday and Tuesday, 3.00-4.00 P. M., and during 2d half of 2d term, Saturday, 9.15-10.15 A. M. Abridged course, Wednesday, 5.00-6.00 P. M., throughout the year.]

38 *Experimental Work in Crystallography.* Daily.

The chief features of this course are the measurement of the angles of crystals with the reflection goniometer; the determination of symmetry; the plotting of the forms of crystals in the stereographic and linear projections; the calculation of axial ratios of crystals and of the symbols of their faces; and the drawing of crystal forms and combinations. For an elementary course, including a few examples in each of the six systems, a practical exercise (3 hrs.) once a week throughout the year is generally sufficient; the course may be lengthened and varied, however, to almost any desired extent. A knowledge of plane trigonometry is indispensable, and some experience in mechanical drawing is most desirable.

39 *Experimental Work in the Optical Properties of Crystals.* Daily.

In this course the optical properties of crystals are studied and determined. Students learn to use the refractometer, total reflectometer, polariscope, polarizing microscope, axial angle apparatus and other optical appliances. A knowledge of optics is indispensable.

40 *Original Investigation in Mineralogy and Crystallography.*

Those who are sufficiently advanced may undertake research work in mineralogy and crystallography. Such work may be along the lines of analytical chemistry for determining the composition of minerals, or the crystallographic and optical properties of minerals may be studied. Material for investigation is available from the Brush Collection and the University Mineral Cabinet.

Mr. FORD :—

41 *Ore Deposits.* 1 hr. 2d half of 2d term.

A short course of lectures of an elementary nature. Emphasis is laid on the principles of ore deposition and short descriptions are given of the typical and important ore deposits of North America. The course is illustrated by lantern slides and by specimens taken from the ore collection of the Sheffield Scientific School. A knowledge of elementary mineralogy and geology is desirable.

PETROLOGY

Professor PIRSSON :—

42 *Petrology.*

Daily, 9 A. M. to 1 P. M.

(a) Study and determination of the rock-making minerals by optical and chemical methods. Includes the use of the petrological microscope.

(b) History, origin, and classification of rocks, commencing with igneous types and passing into the crystalline schists, during which metasomatic and dynamic changes, including effects of dynamo-metamorphism, are taken up. The work is carried on mostly in the laboratory, with access to collections both of rocks and thin sections.

(c) Original investigation. In sequence to (a) and (b) some special object or locality may be made the subject of investigation. The work requires laboratory methods of determination, both chemical and microscopical, with consultation of the literature and occasionally work in the field. A large amount of material is available in the petrologic collections of the Sheffield Scientific School.

Only those whose previous training in mineralogy and geology has been sufficient to enable them to pursue the subject advantageously are admitted to this course.

43 *Elementary Petrology.*

1 hr. 1st half 2d term.

A series of lectures of an elementary nature, and without the use of the microscope, on the history, origin, and classification of rocks with especial reference to their geologic relations and economic properties. Illustrated by collections.

[Hour to be arranged.]

GEOLOGY

Professor PIRSSON :—

*44 *Elementary Structural and Dynamical Geology.*

3 hrs. 1st half-year.

This course in Geology is given partly by lectures and partly by recitations with the use of a text-book. It includes the elements of structural and dynamical geology, and these subjects are illustrated by maps, diagrams, photographs and specimens. The course is especially designed as an introduction to more extended geological studies, and may be followed advantageously by course 45.

Professor BEECHER :—

- *45 *Historical Geology.* 3 hrs. 2d half-term.

The sequence and distribution of the sedimentary formations are studied, together with the introduction and succession of the various types of life during past geological ages. Suitable collections of fossils are used to illustrate the subject. This course should follow VI, 44.

Assistant Professor GREGORY :—

- *46 *General Geology.* 2 hrs.

A course of lectures on the general principles of the science of geology. Such topics will be discussed as will give an understanding of the structural features of the earth and of the forces by which its present condition has been attained. The lectures will be supplemented by the use of a text-book and illustrated by specimens and lantern views. Optional excursions to points of geologic interest will be arranged.

Asst. Prof. GREGORY, Prof. WILLIAMS and Mr. ROBINSON :—

- *47 *Geology, with field and laboratory work.* 3 hrs.

This course will include the exercises of course 46, General Geology, and in addition field and laboratory work will be assigned to average 2 hours per week. The laboratory work will consist of the study of important minerals and fossils; the field work will include geologic mapping and excursions. [Students who take this course must leave Monday or Tuesday afternoon free from 2-5.]

Mr. H. H. ROBINSON :—

- 48 *Field Geology.*

The course will consist of field work upon selected areas in the vicinity of New Haven, supplemented by lectures and laboratory exercises upon the construction and use of topographic and geologic maps.

Assistant Professor GREGORY :—

- 49 *Geology of Connecticut.*

A study of some problem connected with the physical geology of Connecticut. The work will be carried on in connection

with the United States Geological Survey and in every case a written report will be required. This report may be presented as a thesis for an advanced degree.

*50 *Physiography.* 2 hrs.

A study of the origin, development and classification of land forms followed by a study of the physiography of the United States. The exercises will include lectures, field excursions, the reading of topographic maps and of geologic literature.

51 *Physiography.*

The origin, development and classification of land forms, as illustrated by some area selected for special study.

Mr. TARR :—

52 *Meteorology.*

This course will include studies of the general circulation of the winds ; the development of storms ; storm tracks and their effect on climate ; thermodynamics of the atmosphere ; methods of forecasting the weather. The instruments, records and charts of the United States Weather Bureau office will be available for research work.

Professor H. S. WILLIAMS :— 2 hrs.

53 *Historical Geology.*

Elementary study of geological formations and of the principles of their classification and correction by fossils, consisting chiefly of laboratory study of collections, reading of geological literature and the preparation of scientific papers.

54 *Faunal Paleontology.* Daily.

A special study of fossil faunas, their composition, relations to conditions of environment, origin, geographical distribution and succession in time. The Laboratory of Devonian Paleontology of the United States Geological Survey is available for illustration, as well as the collections in the Peabody Museum. This course is specially intended for men preparing for practical geological survey work, for whom opportunity for summer practice may be arranged.

- *55 *Evolution.* 2 hrs.

An elementary lecture course on evolution, supplemented by text-book use of Darwin's *Origin of Species*, upon which examinations will be held.

PALEONTOLOGY

Professor BEECHER :—

- 56 *General Invertebrate Paleontology.* 2 hrs. 1st term.

An elementary course, including the careful study in the laboratory of characteristic genera representing the principal orders of fossil invertebrates.

- 57 *Invertebrate Paleontology (Special).*

Systematic study of the structure, development, and affinities of one or more classes of fossil animals. In the laboratory work, attention is given to modern methods of preparation and preservation of specimens.

- 58 *Original Investigation in Invertebrate Paleontology.*

Following 52, 53, 54, opportunity is given to take up some special subject for investigation and the discovery of facts new to science.

The requisite material is available in the extensive collections of the Peabody Museum.

The work in these courses (52-54) necessitates the frequent consultation of memoirs and scientific reports, occasional field-work, the use of the microscope, the preparation of thin sections, and other methods employed in thorough investigations.

- 59 *Organic Evolution.* 1st half-year.

Practical illustration of the methods used in modern researches, and the principles governing the classification of organisms.

Courses 57-59 are open to those who have had some previous knowledge of geology and zoology. Course 57: laboratory work 4 hours per week. Courses 57, 59: laboratory work three days per week, 2.00-5.00 p. m. Courses 17 and 18 will require about two hours of lectures and two hours in the laboratory each week. Other hours and divisions of work may be arranged to suit the convenience of students.

BIOLOGY

Professor VERRILL :—

60 *Zoology.*

Laboratory practice, recitations, readings, and lectures. The laboratory work is varied according to circumstances, in order to accommodate, as far as possible, those students who wish to pursue special branches. Most of the time is devoted to comparative anatomy, morphology, histology, and systematic zoology. Ample collections in the Peabody Museum, representing all classes of animals, are available for instruction, while the proximity to the sea makes it easy to provide fresh or living examples of most classes of marine animals for study and dissection.

Professor S. I. SMITH and Assistant Professor COE :—

*61 *Elementary Anatomy and Histology.* 4 hrs. 1st term.

*62 *Comparative Anatomy and General Biology.* 6 hrs. 2d term.

63 *Comparative Anatomy and General Biology.*

Graduate students who have had sufficient elementary training are received in the Sheffield Biological Laboratory, and are provided with special advanced courses of instruction adapted as far as possible to the particular wants of the individual student. Such courses may cover either or both terms, and require at least three hours of laboratory work per day for two or more days each week. To such students the laboratory is open five days a week.

64 *Morphology and Embryology of Vertebrates.*

1st half 2d term.

A course of about twenty exercises of two hours each, consisting of lectures and demonstrations with laboratory work. The classification of vertebrate animals, and the comparative morphology of the different sets of organs in the various groups, is first discussed with special reference to human morphology. Then the development, fertilization and cleavage of the egg, and the formation of the germ layers, tissues and organs of the vertebrate body are taken up in order. The course may be supplemented, if desired, by more extended practical work in the laboratory.

Assistant Professor COE :—

65 *Biology of the Cell, and General Embryology.*

4 hrs. 1st term.

A general course in Cytology, consisting of laboratory work supplemented by informal lectures, on the structure and manifestations of the animal cell, with special attention to maturation, fertilization, and cleavage of the ovum. The subject is treated with reference to its bearing on the problems connected with the phenomena of growth, heredity and evolution. The course will include the practical study of protoplasmic structure and movement, various types of cells with resting nuclei, cell-division, conjugation in unicellular animals, structure of spermary and development of spermatozoa, ovary and development of the ovum, fertilization, parthenogenesis, types of cleavage, and formation of primary layers of the embryo. Considerable attention is given to the technique of the subject, and to experimental embryology.

In addition to the above, special courses may be arranged for the second term to meet the requirements of individual students, and such courses may include a study of the later stages of the development of the embryo, with special reference to the vertebrates.

A special course to include the practical study of the development of the chick may be arranged for either the first or second term.

Dr. EATON :—

66 *Comparative Osteology.*

2 hrs.

An elementary course especially designed as a preparation for the study of Vertebrate Paleontology. Laboratory work in which the most important types of the vertebrate skeleton are studied and compared. Hours will be arranged by the instructor upon consultation.

Professor FERRIS :—

67 *Comparative Morphology of the Vertebrate Brain.* 1 hr.

A course extending through the entire year, consisting principally of dissections and drawings, with some demonstrations and lectures, on the embryology and general morphology of the brain.

Professor CHITTENDEN and Assistant Professor MENDEL:—

68 *Physiological Chemistry.*

Graduate students who have sufficient knowledge of analytical and organic chemistry and elementary physiology are received in the Sheffield Biological Laboratory at the beginning of the academic year, where they can pursue a course in physiological chemistry extending throughout the entire year. The course necessitates, on an average, four hours of laboratory work each day, and attendance at lectures and recitations three or four times each week. Opportunities are afforded also for the carrying on of original investigations, and to students qualified for such work the laboratory is open during the entire day.

Students who are desirous of studying any special subject in physiological chemistry and have but a limited amount of time are received also, provided they are qualified by previous work to pursue the study advantageously.

[Monday to Friday, inclusive, 9.00 A. M.—1.00 P. M.]

69 *Experimental Physiology.* 3 hrs.

Essentially a laboratory course intended to afford experimental acquaintance with certain departments of physiology, and giving particular reference to general physiological methods. The physiology of muscle and nerve, of the circulation, secretion, etc., is considered in some detail. Other departments are treated in a more elementary manner; a brief survey of the entire field is thus afforded, while certain topics are studied with sufficient thoroughness to give training in technique and appreciation of the aims and methods of research. Opportunity is also afforded for more advanced work in certain lines of experimental physiology.

[Saturday, 9.00 A. M.—1.00 P. M.]

70 *Physiological Seminary.* 2 hrs. both terms.

A study of the recent advances in physiology and physiological chemistry is undertaken. Informal talks are given on the bearing which recent discoveries in physiology have on existing views, and the students are required to prepare reports and reviews of work appearing in the current German, French, and English physiological literature.

[Wednesday, 4.00—6.00 P. M.]

Professor CHITTENDEN :—

71 *Experimental Toxicology.* 2d half 2d term.

A course of about twenty lectures, with demonstrations on the physiological action of the more important mineral and alka-

loidal poisons. This course can be supplemented, if desired, by laboratory work on the chemical reactions of poisons, with a study of the methods of detecting and separating poisons.

[Tuesday, Thursday, and Saturday, 8.15 A. M.]

- 72 *Physiology.* 1 hr.

Huxley's *Lessons in Elementary Physiology*, with occasional lectures and illustrative experiments.

[Wednesday, 2.00 P. M., B. L.]

- 73 *Physiological Chemistry.* 4 hrs. 2d term.

Four exercises a week, of a minimum of two hours each, in the laboratory of physiological chemistry. The time is devoted mainly to a study of the chemistry of the connective, contractile, and nervous tissue, of the chemical processes of salivary, gastric, and pancreatic digestions, and so far as the time allows, of other subjects connected with the physiology of nutrition and the chemistry of the excretions.

A laboratory fee is charged for this course. The student in addition must bear the expense of gas, flask, etc., which should not exceed ten dollars.

- 74 *Physiology of Nutrition.* 3 hrs. 1st half 2d term.

Assistant Professor EVANS:—

- *75 *Botany.* 4 hrs. to count as 2 hrs.

An elementary course in the botany of flowering plants. Laboratory work and informal lectures. The plant and its various organs are studied with respect to their form, structure, and functions, and special emphasis is laid on the relationships of a plant to its environment.

[Tuesday and Thursday, 2.00 P. M.]

- 76 *General Morphology of Plants.* 4 hrs.

Laboratory work and informal lectures. Beginning with the simplest forms, the various groups of plants are taken up in suitable types, and their structure, development, and mode of life are studied and compared. The course is limited to those who show a satisfactory knowledge of the botany of flowering plants.

[Wednesday and Friday, 3.00 P. M.]

- 77 *Advanced Morphology and Taxonomy of Plants.*

The botanical laboratory is open throughout the year to graduate students, properly qualified, who may wish to pursue

advanced studies along some special line in morphological or taxonomic botany. The instruction will be adapted as far as possible to the needs of the individual student.

For a course in *The Statistical Theory of the Evolution of Man*, see *The Social Sciences* course 36.

FORESTRY

The following courses given in connection with THE FOREST SCHOOL are open to graduate students.

Assistant Professor TOUMEY and Assistant :—

78 *Forest Botany.* 2 to 4 hrs.

The identification of trees and shrubs, their distribution, habit, and uses. Herbaceous and cryptogamic plants will be briefly considered so far as a knowledge of them may prove useful in Forestry. The course will also include a study of the anatomy and physiology of trees.

Professor BREWER :—

79 *Meteorology and Forest Physiography.* 4 hrs. 1st half 2d term.

General conditions necessary to forests ; elementary meteorology ; forests as related to temperature and its range ; to rainfall and its range ; to excesses of weather and climate ; to the mechanical and chemical nature of soil and ground-water ; to the geological character of the surface ; to the relief-forms of the land ; to other geographical features ; the geographical distribution of forests : the aspects of forests as related to climate and topography ; the geological history of forests ; and forests in relation to public health.

Assistant Professor TOUMEY :—

80 *Introduction to Forestry.* 3 hrs. 1st half-year.

This course is designed to give a comprehensive view of Forestry with special reference to its economic aspects. It considers the purpose and scope of Forestry, its importance in national economy, the indirect influence of forests, the relation

of the State to forests and Forestry, the need for Forestry and its practice in the United States. It is open to undergraduates of the University.

Professor GRAVES :—

81 *Silviculture.* 3 hrs.

Characteristics of forests ; the forests of the world ; forest regions of the United States ; special consideration of trees important in Forestry ; methods of conducting silvicultural studies ; methods of reproducing forests ; treatment of forests.

Forest planting will be taught in the spring term by Professor Toumey. Attention will also be given to the planting and care of trees in streets and parks for ornament and shade, with notes as to the relative suitability of different trees to these uses.

Mr. BOWERS :—

82 *Forest Administration and Law.* 1 hr. 1st half 2d term.

The development of the public domain with reference to the creation of a forest policy by the United States and a consideration of laws relating thereto, including rules and regulations governing public lands, forest reserves and national parks.

Special consideration of the laws and decisions of the Federal State Courts with reference to timber trespass, river driving, riparian rights, damages resulting from forest fires, etc.

Professor GRAVES :—

**83 *History of Forestry.* 1 hr. 1st term, and
1st half 2d term.**

Rise of Forestry abroad and in the United States. Present practice of Forestry in different countries.

Assistant Professor TOUMEY :—

**84 *Forest Technology.* 2 hrs. 1st term, and
1st half 2d term.**

The structure of wood and the classification of economic woods of the United States in accordance with structural features ; the physical, chemical, and mechanical properties of wood ; the use of wood in the arts and the combination of properties which determine the value of woods for different purposes.

VII. MATHEMATICS

J. WILLARD GIBBS, Ph.D., LL.D.	CHARLES B. RICHARDS, M.A.
EUGENE L. RICHARDS, M.A.	A. JAY DUBOIS, Ph.D.
WILLIAM BEEBE, M.A.	ANDREW W. PHILLIPS, Ph.D.
JAMES PIERPONT, Ph.D.	PERCEY F. SMITH, Ph.D.
SAMUEL E. BARNEY, C.E.	HENRY A. BUMSTEAD, Ph.D.
MILTON B. PORTER, Ph.D.	HERBERT E. HAWKES, Ph.D.
WILLIAM A. GRANVILLE, Ph.D.	EDWIN B. WILSON, Ph.D.
EARLE R. HEDRICK, Ph.D.	ARTHUR S. GALE, Ph.D.

Connected with the department are the Seminary rooms, the Mathematical Laboratory, the Collection of Models, the Mathematical Club, the Engineers' Club.

The SEMINARY ROOMS, which are at 90 High street, may be used by all students in mathematics. The seminary rooms afford a place for students to meet for the discussion of mathematical questions, and study. There is a good departmental reference library, and also a collection of drawings and models made by students of previous years illustrating various theories. Many of the lectures in this department of past years have been reported and are here to be found bound and ready for consultation.

The MATHEMATICAL LABORATORY occupies a commodious room on the floor below the seminary rooms. It is well equipped with tools and drawing instruments necessary to construct mathematical models. Students are given direction and advice for the proper and expeditious construction of models more or less elaborate, illustrating the subjects they are studying. Such models and drawings serve to develop the student's geometrical intuition as well as to make more clear the particular theory in hand. Students who expect to become teachers will find the laboratory most useful in acquiring facility in preparing simple models to illustrate subjects they may later have to teach.

The COLLECTION OF MATHEMATICAL MODELS is one of the most extensive in the country, and is constantly growing. Besides a very complete selection of plaster and thread models from Brill and Schilling, etc., the collection contains a large number of models illustrating the teaching of solid geometry, the theory of equations, and various kinematical principles, as well as the theory of twisted curves and surfaces which have been made under the direction of instructors of the department.

The MATHEMATICAL CLUB holds fortnightly meetings, at which are presented summaries of articles in current periodicals and recent works on pure and applied mathematics, descriptions and models of new apparatus, also papers containing the results of the original investigations of the instructors and advanced students in this department. All students are encouraged to prepare papers which, while not original, give a comprehensive survey of some field of mathematics, or treat from a new standpoint some question of general interest to the members of the club.

The ENGINEERS' CLUB meets monthly in North Sheffield Hall for the reading and discussion of papers on subjects relating to the different branches of engineering.

Lectures are occasionally given before the club by professional experts.

PURE MATHEMATICS

Professor GIBBS :—

1 *Vector Analysis.*

3 hrs.

In the first part of this course the simpler problems of geometry, kinematics, and mechanics are treated by vector methods. The matter taught is not entirely unlike that usually given in courses in quaternions, but the method followed is in some respects nearer to Grassmann's than to Hamilton's. The same method is then applied to differentiation with respect to position in space, the theory of the potential and allied functions, and that of linear

vector functions. Applications are made to hydrodynamics, to the motion of a rigid body, and to the theory of curvature. This course is especially designed as an introduction to the study of mathematical physics.

[Monday, Wednesday, and Friday, 3.00 P. M., Sloane Physical Laboratory.]

2 *Multiple Algebra.* 2 hrs.

The object of this course is to give some idea of the methods and results of the principal non-arithmetical algebras, especially of the *Ausdehnungslehre* and the algebra of matrices. It is intended for such students as have already some familiarity with the algebra of vectors, derived from the preceding course or from the study of quaternions.

[Monday and Wednesday, 5.00 P. M., Sloane Physical Laboratory.]

3 *Electro-magnetic Theory of Light.* 2 hrs.

This course commences with the general theory of harmonic motion and its representation by complex scalar and vector quantities. The laws of electrodynamics are then applied to the phenomena of the propagation of light in isotropic and æolotropic media, and its reflection at a surface between two such media, including the case of an absorbent medium, and the dispersion of colors.

[Monday and Friday, 5.00 P. M., Sloane Physical Laboratory.]

In the year 1903-1904, in addition to the course 1 in vector analysis, the following may be expected :

[4 *Electricity and Magnetism.* 1 hr.]

In this course, which is based on Maxwell's theory, the student is taught the use of vector methods in this branch of physics.

Omitted in 1902-1903.]

[5 *Thermodynamics and Properties of Matter.* 2 hrs.]

This course is a development of the consequences of the two fundamental laws of thermodynamics, as affording a general theory of physical and chemical equilibrium, and as giving shape to the investigation of the sensible properties of matter.

Omitted in 1902-1903.]

Professor BEEBE :—

6 *Analytical Mechanics.* 3 hrs. 1st half-year.

The object of this course is to introduce the student to the more important facts of statics and dynamics, making use of the calculus. To develop the student's mechanical intuition, a large variety of problems is given.

Books of reference: Bowser's *Analytical Mechanics*; Ziwet's *Mechanics*; Williamson's *Dynamics*; Voigt's *Mechanik*; Appell's *Traité de Mécanique rationnelle*.

[Monday, Wednesday, Friday, 10.30 A. M.]

7 *Celestial Mechanics.* 3 hrs. 2d half-year.

Development of formulae and numerical calculations for determining parabolic and elliptic orbits from three observations.

Computation of an ephemeris and reduction of observations for comparison with the ephemeris.

The course may be carried on through a second year to the discussion of perturbations.

Professor PIERPONT :—

8 *Advanced Calculus.* 3 hrs.

This is a continuation of the first course in calculus, and in turn leads up to courses in higher analysis and geometry. More advanced parts of the calculus are here treated, especial attention being given to applications to the theory of curves and surfaces.

Books of reference: Byerly's *Differential and Integral Calculus*; Serret-Bohlmann's *Differential und Integral Rechnung*.

[Monday, Wednesday, and Friday, 5.00 P. M.]

9 *Projective Geometry.* 3 hrs.

Both the analytic and synthetic methods will be used to develop the fundamental properties of points, lines, planes, conics and quadric surfaces, and the linear transformation in the plane and in space.

[Monday, Wednesday, and Friday, 4.00 P. M.]

10 *Advanced Theory of functions of a complex variable.* 3 hrs.

The theories of Riemann and Weierstrass will be developed and compared. Some account of the recent work of Borel, Hadamard, Mittag, Leffler and others concerning Taylor's Series and its analytic prolongation, will be given.

Professor P. F. SMITH :—

- 11 *Advanced Analytic Geometry.* 2 hrs. 1st half-year,
3 hrs. 2d half-year.

A thorough acquaintance with Analytic and Projective Geometry is assumed, such as would be gained from introductory courses in these subjects. The spherical geometries of Darboux and Lie, and the line geometry of Pluecker will be discussed with their corresponding groups, and the course will extend somewhat into the geometry of contact transformations.

- 12 *Differential Equations.* 2 hrs. 1st half-year.

One of the better American text-books is used, the intention being to acquaint the technical student with the classical methods of obtaining the real solutions of differential equations.

Assistant Professor BUMSTEAD :—

- 13 *Problems in Mathematical Physics.* 2 hrs.

The application of the general equations of physics to the solution of definite problems possessing theoretical or experimental interest. During the coming year the course will have to do mainly with the propagation of electrical waves along wires and in the neighborhood of conducting masses. As a preliminary, the properties of Bessel's functions will be developed as far as may be necessary for the purposes of the course.

Assistant Professor PORTER :—

- 14 *Differential Equations and Function Theory.* 3 hrs.

Topics are : definite integrals, Gamma functions, elements of the function theory of a complex variable, elliptic functions with application to physics and geometry, differential equations, particularly the equations of mathematical physics.

[Tuesday, Thursday, and Friday, 4.00 P. M., B₁ O.]

- 15 *Invariants.* 3 hrs. 2d half-year.

The theory of invariants of binary and ternary forms will be developed with especial reference to its geometrical significance in the geometry of the right line and plane.

Dr. HAWKES :—

16 *Higher Algebra.* 3 hrs.

Topics of the following nature will be treated: Integral rational functions, reducibility, symmetric functions, quadratic forms, numerical solution of equations, elimination, Kronecker's theory of characteristics, roots of unity, Galois' theory.

17 *Complex Multiplication of Elliptic Functions.* 3 hrs. 2d half-year.

The theory will be treated with particular reference to the theory of binary quadratic forms of negative determinant, and the general theory of algebraic numerical fields.

Dr. GRANVILLE :—

18 *Analytical Mechanics.* 2 hrs.

An advanced course in this subject, treating of the kinematics of a rigid body, the general equations of dynamics, etc. A good knowledge of the Calculus and a previous course in elementary mechanics is assumed.

In connection with this course the student will be given an opportunity to construct models in the mathematical laboratory.

Dr. HEDRICK :—

19 *Partial Differential Equations.* 3 hrs.

The course will begin with an elementary exposition of the subject, including simple methods of integrating particular equations. Some of the topics to be treated are: the reduction of a linear equation to a set of ordinary equations; the Cauchy-Kowalewski theorems, and allied existence theorems; characteristics; singular solutions; Pfaff's problem; Lie's transformations; the boundary value problem; and the equations of mathematical physics.

Books of reference: Picard, *Traité d'Analyse*; H. Weber, *Die partiellen Differentialgleichungen* (Riemann's lectures); E. Goursat, *Leçons sur l'intégration des équations aux dérivées partielles*; S. Lie, *Differentialgleichungen*; Forsyth, *Theory of Differential Equations*; E. von Weber, *Das Pfaff'sche Problem*; Fricke, *Functionentheoretische Vorlesungen*; and various articles in the *Encyclopädie der Mathematischen Wissenschaften*, Bd. II.

A thorough knowledge of the Calculus, and previous courses in Surface Theory and in Ordinary Differential Equations will be assumed.

Dr. GALE :—

20 *Theory of Transformations of Space.*

3 hrs. 1st half-year.

This course will deal, synthetically and analytically, with the Euclidean and conformal transformations, collineations and correlations in spaces of two and three dimensions. The idea of a *group of transformations* will be emphasized throughout by the study of the finite and infinite continuous and discontinuous groups presenting themselves in connection with the various transformations considered. Finally, the elements of the theory of contact transformations will be developed.

ENGINEERING AND PRACTICAL ASTRONOMY

Professor C. B. RICHARDS :—

MECHANICAL ENGINEERING.

This course, arranged for candidates for the degree of Mechanical Engineer, is open also to special graduate students, who are allowed in certain cases to take selected parts. The leading topics are :

21 *Applied Mechanics.*

Including graphical methods in applied kinematics, and in the investigation of mechanisms working with friction ; graphical determinations of the accelerations of the moving parts of machines ; the strength of materials as affecting the proportions of machine elements ; the applications of the principles of hydraulics to the construction and working of turbines and pumps.

22 *Thermodynamics.*

Applications to the compound steam-engine, air compressors and compressed air motors, engines worked by volatile vapors, refrigerating machines, the warming and ventilation of buildings.

23 *Machine-Design.*

In this course the student is engaged in practical exercises under the guidance of the professor in charge, investigating machinery, the designing and making of working-drawings, specifications, and estimates for machines and manufacturing plant. In addition to the study of machines in general, one of the following subjects (at the option of the student) receives particular attention : (a) Marine engineering ; (b) Railway machinery ; (c)

Pumping machinery and plant; (d) Machinery and plant for manufacturing. The student is required to make complete drawings, from new designs, of at least one important piece of machinery under one of these subjects. A compound marine engine and boilers, a locomotive, a turbine-driving centrifugal pump, a blowing-engine for an iron furnace, are examples.

Candidates for the degree of Mechanical Engineer are required to take also a course in mathematics, to sustain a final examination, and to present a satisfactory thesis on a subject approved by the professor in charge of the course.

Professor DuBois :—

CIVIL ENGINEERING.

This course offers instruction for advanced graduate students as well as for those students who are regular candidates for the degree of Civil Engineer. It embraces the following topics:

24 *Mechanics applied to Engineering.* 3 hrs.

Including the application of kinematics, statics, and kinetics to engineering problems.

25 *Construction and Design.* 3 hrs.

Including the strength and properties of materials, construction and design of bridges, roofs, foundations, retaining walls, dams and embankments, masonry arches, sewerage and drainage, improvement of rivers and harbors, specifications and contracts, and the preparation of designs and working-drawings.

Candidates for the degree of Civil Engineer are required to take, in addition, a selected course in mathematics and practical astronomy, and when the facilities in the physical laboratory permit, a course of laboratory work under the superintendence of the professors in charge. They are also required to sustain a final examination, and each to present a satisfactory thesis, accompanied by appropriate designs, upon a subject approved by the professor in charge of the course.

To special students, not candidates for the degree of Civil Engineer, a selection of special topics is allowed.

Professor BEEBE :—

[26 *Practical Astronomy.* 2 hrs.

This course consists of observatory work with astronomical transit and chronograph for determination of sidereal and stand-

ard time, and with sextant and theodolite for determination of latitude and azimuth, numerical computations for reduction of observations, derivation of formulae, and recitations from Loomis's *Practical Astronomy*.

Omitted in 1902-1903.]

Assistant Professor BARNEY :—

27 *Geodesy and Practical Astronomy.* 2d term.

Methods of observation, based on measurements, triangulation field-work ; theory of least squares, adjustment of observations, and computation of geodetic latitudes, longitudes, and azimuth. The study of practical astronomy embraces the use of the sextant and engineer's transit with solar attachment for determining time, latitude, azimuth, and needle variation.

28 *Railway Surveying.* Three weeks in September.

A preliminary line for a railroad is run out, and from the contour map so obtained a final line is located, staked out, and cross-sectioned, and estimates are made for construction. The field-work begins the first Monday in September and occupies the entire time for three weeks.

29 *Sanitary Engineering.*

a. *Water Supply.* 1st term.

Methods of collecting and distributing water. Designing of reservoirs, pipe systems, and filtration plants.

b. *Sewer Systems.* 2d term.

Design and construction of sewer systems, etc.

VIII. THE FINE ARTS

JOHN F. WEIR, N.A., M.A.

JOHN H. NIEMEYER, M.A.

Professor WEIR :—

1 *Technical Course in Painting.*

Only those students who have been qualified by a course in drawing can enter the course in painting. The hours for students of the Graduate School must be determined individually. The charge for instruction, entitling the student to all the privileges of the School, is \$25 for the college year.

2 *Course in Modeling.*

The course consists in modeling from the antique and from the living figure and is supplemented by the lectures given in course 1.

Professor NIEMEYER :—

4 *Course in Drawing.*

Students in the Graduate School may pursue the course in drawing in the Art School without restriction as to time. The charge for instruction is \$25 for the college year, entitling the students to all the privileges of the School as arranged for students from other departments of the University.

IX. MUSIC.

HORATIO W. PARKER, M.A. SAMUEL S. SANFORD, M.A.
HARRY B. JEPSON, B.A., Mus.B. ISIDOR TROOSTWYK,
H. STANLEY KNIGHT.

Professor PARKER :—

1 *Counterpoint.*

A thorough knowledge of Harmony is required of students in this course.

The work is the harmonizing and supplying melodious additional voices to choral and other melodies used as *Canti Firmi*.

The different orders of Counterpoint in two, three, and four voices ; also double counterpoint, and more or less free imitative writing.

Students in this course are encouraged to try the simpler forms of free composition. No text-book is used.

[Tuesday and Thursday, 3.00 P. M.]

2 *Strict Composition.*

The more severe kinds of composition form the basis of work in this course.

Harmony in Five and more parts ; Threefold and Fourfold Counterpoint ; Four- and Three-part Fugues for voices or for instruments ; Canons of various kinds, with or without accompaniment of free voices ; Free treatment of different kinds of thematic material.

This course is preparatory to course 6. No text-book is used.

[Tuesday and Thursday, 2.00 P. M.]

3 *The History of Music.*

Lectures on the development of music from its earliest stages ; history of Church Music from the time of Gregory ; history of Opera and Oratorio ; biographical sketches of famous composers, with description and analysis of their principal works ; history of purely instrumental music, showing the growth and development of musical forms up to their culmination in Beethoven.

Practical illustrations of the lectures on musical forms are given in the class-room.

[Wednesday, 5.00 P. M.]

4 *Instrumentation.* 2 hrs.

This course is open only to students who have done the work of courses 1 and 2, and it is strongly recommended that course 4 also should precede it.

Lectures are given on the nature, compass, tone-color, and other characteristics of all the instruments of the modern orchestra, with illustrations of their use by great composers.

Exercises in the practical orchestration of short pieces from the works of classic and modern composers, in analyzing, reading and playing from orchestral scores, beginning with Haydn and Mozart Symphonies, and embracing modern works of various kinds.

[Wednesday and Friday, 3.00 P. M.]

5 *Free Composition.*

This course is open only to students who have done the work of courses 1, 2 and 4 and 5, and have shown unmistakable talent for original composition. Several of the smaller forms of free instrumental and vocal music are composed by the students, and studies are made for larger compositions, which are finished in case the thematic material offered is of sufficient merit.

At the close of the year the student is required to produce an extended work, probably in sonata form.

[Wednesday and Friday, 2.00 P. M.]

Assistant Professor JEPSON :—

6 *Harmony.* 2 hrs.

The study of chords, their construction, relations and progressions. This course covers the following subjects :

Intervals, triads, seventh chords, modulations, chromatically altered chords, suspension, organ point, passing and changing notes.

Figured bass is used only as a means of designating chords. Attention is turned at once to the harmonizing of melodies.

The original principles from which rules are derived are discussed and students are encouraged to exercise and cultivate their own judgment in the application of these principles.

Particular attention is given to the natural melodic and harmonic tendencies of tones and intervals. The subject of modulation is treated with special care and at length. Exercises are corrected in the class-room with explanations and illustrations.

G. W. Chadwick's *Harmony* is used as text-book.

[Tuesday and Thursday, 4.00 P. M.]

Professor SANFORD, Assistant Professors JEPSON and
TROOSTWYK, and Mr. KNIGHT :—

7 *Practical Music.*

Instruction is given in Piano-, Organ-, and Violin-playing to a limited number of students. Fees range from \$50.00 to \$150.00 for the college year.

Each student of the piano-forte receives individual instruction, under the supervision of Professor Sanford, who will in person instruct a limited number of advanced students in the higher branches of the art, particularly in *ensemble* and concert-playing.

No student is admitted to a course in practical music who has not been admitted to one of the theoretical courses.

Students of organ-playing receive personal instruction from Prof. Jepson, and of violin-playing from Mr. Troostwyk.

X. PHYSICAL EDUCATION

JAY W. SEAVER, M.A., M.D. WILLIAM G. ANDERSON, M.D.

Dr. SEAVER and Dr. ANDERSON :—

Physiology and Gymnastics. 2 hrs.

This course is designed for those who intend to teach gymnastics or to direct departments of physical education in institutions of learning, and for those who wish more complete and systematic training than is offered in Freshman year. The work comes under two general branches as follows :

1. *Physiology.*

This work consists of one recitation or lecture a week with Dr. Seaver, during the year. The first term is devoted to elementary physiology. The second term is devoted to human physiology ; special attention being given to a study of the circulation, respiration, digestion, and excretion. The hygienic importance of these topics is carefully studied. The third term is given to a study of sanitary science. Collateral reading will be required during the third term.

Dr. Seaver may be consulted at the Gymnasium from 9.30 to 10.30 A. M. daily.

[Thursday, 7.00 P. M., University Gymnasium.]

2. *Principles and Practice of Gymnastics.*

Under this head will be discussed by Dr. Anderson (a) the scientific basis of physical training ; (b) history of gymnastics and growth of the various systems ; (c) means employed, such as apparatus and appliances ; (d) physical examinations and measurements ; (e) pedagogy of gymnastics. Required text-books : Anderson's *Gymnastic Terminology* and *Methods of Teaching Gymnastics*.

Members of the class will be called upon to arrange exercises for other classes, to classify movements for overcoming common physical defects, and to do practice work in teaching gymnastics.

Dr. Anderson may be consulted at the Gymnasium from 3 to 5 P. M.

[Monday and Friday, 11.30 A. M., University Gymnasium.]

UNIVERSITY PRIVILEGES

CLUBS FOR RESEARCH

In various voluntary associations, instructors and students meet periodically for the reading of papers, oral discussions, etc.; such are :

- The CLASSICAL CLUB.
- The MATHEMATICAL CLUB.
- The POLITICAL SCIENCE CLUB.
- The PHILOSOPHICAL CLUB.
- The SEMITIC AND BIBLICAL CLUB.
- The BIBLICAL RESEARCH CLUB.
- The MODERN LANGUAGE CLUB.
- The GERMAN JOURNAL CLUB.
- The ENGLISH CLUB.
- The PHYSICS JOURNAL CLUB.
- The ENGINEERS' CLUB.
- The CHEMICAL CLUB.
- The HISTORICAL CLUB.
- The PHYSICAL CLUB.
- The GEOLOGICAL CLUB.
- The BIOLOGICAL CLUB.
- The KENT LABORATORY JOURNAL CLUB.
- The ANTHROPOLOGY CLUB.

LIBRARIES AND READING-ROOMS

Students have the free use of all the Libraries of the University. The whole number of volumes in the several libraries of the University is more than 350,000.

The UNIVERSITY LIBRARY contains about 275,000 volumes, and many thousands of unbound pamphlets. Its READING-ROOM contains the books most important for daily consultation and reference, together with scholarly periodicals, and is open on every week-day from 9 o'clock A. M., for twelve hours. Of current periodical publications, including publications of learned societies, the

Library receives an unusually large number,—the foreign serials alone being not less than five hundred.

The LINONIAN AND BROTHERS LIBRARY, occupying the south wing of the old Library building, contains about 22,000 volumes of the best current literature. It is open from 9 A. M. to 5 P. M.

The COLLEGE READING-ROOM receives fifty-nine daily newspapers, American and foreign, fifty-five weeklies, and seventy-two other periodicals,—in addition to the periodicals received at the University Library.

The SHEFFIELD SCIENTIFIC SCHOOL LIBRARY is a valuable collection of 5,000 volumes, chiefly mathematical.

The ART SCHOOL LIBRARY contains about 500 volumes of expensive illustrated works.

The TROWBRIDGE REFERENCE LIBRARY in the Divinity School contains 3,000 volumes of works of reference for Biblical study.

The LOWELL MASON LIBRARY in West Divinity Hall contains 4,000 volumes of music.

The Peabody Museum, the Observatory, and the several Laboratories have valuable technical libraries.

The Library of the AMERICAN ORIENTAL SOCIETY, consisting of about 6000 books and manuscripts, is deposited in the University Library building.

Several of the departments of study (the Classical, English, Germanic, Mathematical, Philosophical, Political Science, and Historical) have special libraries of standard works for the use of advanced students.

For a Course of Lectures on the USE OF THE LIBRARY, see page 95.

LABORATORIES, MUSEUMS, AND COLLECTIONS

The Peabody Museum of Natural History.

The Physical, the Chemical, the Biological, and the Engineering Laboratories, and the Eaton Herbarium, of the Sheffield Scientific School.

The Sloane Physical, the Kent Chemical, and the Psychological Laboratories of Yale College.

The collections of the School of Fine Arts.

The collection of coins in the University Library, and various collections of models, casts, and photographs used in the teaching of mathematics and in other departments of instruction.

LECTURES AND CONCERTS

The following courses of public lectures and concerts are open to the students of the University :

The SHEFFIELD LECTURES.

The ART SCHOOL LECTURES, including the Trowbridge Lectures on Art.

The LYMAN BEECHER LECTURES ON PREACHING.

The AMERICAN LECTURES ON THE HISTORY OF RELIGIONS.

The DODGE LECTURES ON THE RESPONSIBILITIES OF CITIZENSHIP.

The BROMLEY LECTURES ON JOURNALISM, LITERATURE, AND PUBLIC AFFAIRS.

The YALE PUBLIC LECTURES.

The DWIGHT HALL LECTURES.

The SYMPHONY ORCHESTRA CONCERTS : six concerts by the New Haven Symphony Orchestra under the direction of Professor Parker.

The UNIVERSITY CHAMBER CONCERTS : four concerts by the Kneisel Quartet of Boston.

(For admission to the preceding concerts, the Yale Public Lectures and the Sheffield Lectures, a small fee is charged.)

ORGAN RECITALS : by Professor Jepson in the Battell Chapel on Monday afternoons in the Winter term.

Other public lectures are arranged for by the Phi Beta Kappa Society, the Medical Alumni, the Kent Club of the Law School, the Leonard Bacon Club of the Theological School, and other university organizations.

THE UNIVERSITY CHURCH

The privileges of THE CHURCH OF CHRIST IN YALE UNIVERSITY are extended to all students of the University.

PUBLIC WORSHIP is held in the BATTELL CHAPEL every Sunday morning at 10.30 o'clock. The preachers for the year 1901-02 are as follows :

- Sept. 29. Arthur T. Hadley, LL.D., President of Yale University.
Oct. 6. Rev. Lyman Abbott, D.D., Editor of the Outlook.
13. Rev. Prof. Thomas Hall, D.D., Union Theological Seminary.
20. Rev. Joseph H. Twichell, M.A., Hartford, Conn.
27. Rev. James G. K. McClure, D.D., Lake Forest, Ill.
Nov. 3. Rev. Charles E. Jefferson, D.D., New York City.
10. Rev. Alexander McKenzie, D.D., Cambridge, Mass.
17. Rev. Simon J. McPherson, D.D., Headmaster of Lawrenceville School.
24. Rev. Anson Phelps Stokes, Jr., M.A., Yale University.
Dec. 1. Rev. William R. Richards, D.D., Plainfield, N. J.
8. Rev. Donald Sage Mackay, D.D., New York City.
15. Rev. Prof. Francis G. Peabody, D.D., Harvard University.
Jan. 12. Rev. Charles Cuthbert Hall, D.D., President of Union Theological Seminary.
19. Rev. George Hodges, D.D., Dean of the Cambridge Episcopal Theological School.
26. Rev. Rockwell H. Potter, Hartford, Conn.
Feb. 2. Rev. Amory J. Bradford, D.D., Montclair, N. J.
9. Robert E. Speer, M.A., Secretary of the Presbyterian Board of Foreign Missions.
16. Rt. Rev. Chauncey Brewster, D.D., Hartford, Conn.
23. Rev. Newell Dwight Hillis, D.D., Brooklyn, N. Y.
Mch. 2. Rev. Andrew V. Raymond, D.D., President of Union University.
9. Rev. Washington Gladden, D.D., Columbus, O.
16. Rev. Albert J. Lyman, D.D., Brooklyn, N. Y.
23. Rev. William S. Rainsford, D.D., New York City.
Apr. 6. Rev. Prof. Henry Van Dyke, D.D., Princeton University.
13. Rev. H. P. Dewey, D.D., Brooklyn, N. Y.
20. Rt. Rev. Henry Codman Potter, D.D., LL.D., New York City.
27. Rev. George A. Gordon, D.D., Boston, Mass.
May 4. Rev. Prof. J. S. Riggs, D.D., Auburn Theological Seminary.

- May 11. Rev. H. Parkes Cadman, D.D., Brooklyn, N. Y.
18. Rev. Endicott Peabody, LL.M., Headmaster of Groton School.
25. Prof. George H. Palmer, LL.D., Harvard University.
- June 1. Rev. Henry DeWitt Hyde, D.D., President of Bowdoin College.
8. Rev. W. H. P. Faunce, D.D., President of Brown University.
15. Rev. David H. Greer, D.D., New York City.
22. Arthur T. Hadley, LL.D., President of Yale University.
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YOUNG MEN'S CHRISTIAN ASSOCIATION

The YOUNG MEN'S CHRISTIAN ASSOCIATION OF YALE UNIVERSITY is composed of six independently organized Associations in the Academic, Scientific, Graduate, Theological, Law, and Medical Departments of the University. The headquarters of the Association in the Graduate School are in Dwight Hall, on the College Square, which is admirably adapted to be a center of social religious life. The building contains a convenient reading-room, a carefully selected library, an auditorium for general religious services, separate rooms for the Bible classes and prayer meetings.

The activities of the Association in the Graduate School include aid for new students in securing board and rooms, a social reception in the early autumn, and informal social gatherings on Saturday evenings throughout the year, a Bible class on Sunday noons, and practical Christian work in the missions, Sunday schools, and Boys' Clubs which are controlled by the University.

READING ROOM FOR WOMEN STUDENTS

A reading room at 135 Elm street, in charge of the WOMAN'S GRADUATE CLUB, is open to all women studying in the University.

On September 24-27, a member of the Club will be at 135 Elm street from 11.00 A. M. to 1.00 P. M. and from 3.00 to 5.00 P. M., for the purpose of rendering any possible service to the new students.

THE INFIRMARY

The YALE INFIRMARY is situated on Prospect street in a healthful and beautiful part of the city. It was built in 1892 at a cost of about \$40,000. One dollar is charged on the Treasurer's bill for each day that a student remains in the Infirmary. A competent matron is in residence, but the choice of physician rests with the patient.

THE GYMNASIUM

The GYMNASIUM is designed to provide all students of the University, not only with opportunities for general exercise, but also with the means of caring for the body in accordance with the laws of hygiene. It also provides for specific training in view of any physical defects that may be remedied by rational superintendence.

The Department is under the supervision of a Director, assisted by two Associate Directors, both of whom are trained physicians.

THE DINING HALL

The UNIVERSITY COMMONS, in University Hall, furnishes board at cost (approximating \$4.00 per week). The Hall contains seats for 1,008, and is open to the officers and students of the University. Application for board should be made at the office of the superintendent, Mr. F. T. Deshon, at the east end of University Hall.

GRADUATE SCHOOL

LIST OF STUDENTS

IN ATTENDANCE 1901-1902

WITH THEIR MAJOR SUBJECTS OF STUDY

[The major subject of study is stated in each case. Students marked "A." are pursuing courses of study in absence under the direction of the Faculty for the degree of Master of Arts, Mechanical Engineer, or Civil Engineer.]

Elizabeth Frances Abbe, M.A. Wellesley College 1888	<i>Dorchester, Mass.</i> 395 Crown st. Classics
Mary Winchester Abbott, B.A. Vassar College 1894	<i>West Haven, Conn.</i> 37 Lynwood pl. English
George Ferdinand Abel, B.A. Gettysburg College 1897, B.D. Yale University 1900	<i>Philadelphia, Pa.</i> 602 E. D. Philosophy
John Chester Adams, B.A. Yale University 1896, M.A. Yale University 1900	<i>New Haven, Conn.</i> 186 Lawrence st. English
Hubert Hillary Sufferen Aimes, PH.B. Yale University 1897	<i>West Haven, Conn.</i> West Haven History
Carroll Storrs Alden, B.A. Yale University 1898, M.A. Yale University 1901	<i>Chicago, Ill.</i> 139 Dwight st. English
May Alice Allen, B.A. Smith College 1901	<i>Yarmouth, Me.</i> 79 Lake pl. Greek
John Bullions Anderson, PH.B. Union University 1896	<i>Cambridge, N. Y.</i> 66 Whitney av. Botany
Robbins Battell Anderson, B.A. Yale University 1899	<i>Duluth, Minn.</i> A. English
William Gilbert Anderson, M.D. Western Reserve Univ. 1883	<i>Cleveland, O.</i> 120 College st. Biology
Kan-Ichi Asakawa, B.L. Waseda College, Japan, 1895, B.L. Dartmouth College 1899	<i>Fukushima, Japan</i> 105 Park st. History

Keiji Ashida Kwansei Gakuin, Kobe, Japan, B.D. Vanderbilt University 1901	Osaka, Japan Biblical Literature	694 W. D.
George Merrick Baker, B.A. Yale University 1900	Hartford, Conn. German	126 High st.
Cecil Kittredge Bancroft, B.A. Yale University 1891	Andover, Mass. Classics	213 D.
Amy Louise Barbour, B.A. Smith College 1891	Northampton, Mass. Classics	Northampton
James Foote Barnett, B.A. Yale University 1891	Grand Rapids, Mich. History	A.
Samuel Eliot Bassett, B.A. Yale University 1898	New Haven, Conn. Classics	Athens, Greece
Hugh Aiken Bayne, B.A. Yale University 1892	New York City History	A.
William DeVerne Beach, B.A. Yale University 1897, B.D. Yale University 1900	Bridgeport, Conn. Biblical Literature	Bridgeport
Alling Prudden Beardsley, B.A. Wesleyan University 1898	Derby, Conn. Chemistry	Derby
Grace Alida Beebe, PH.B. Wesleyan University 1901	New Haven, Conn. French	32 Grove st.
Silas Palmer Beebe, B.S. Harvard University 1900	New Haven, Conn. Physiology and Physiol. Chemistry	106 Mansfield st.
Mary Kendrick Benedict, B.A. Vassar College 1897	Cincinnati, O. Philosophy	70 Howe st.
Gilbert Giddings Benjamin, PH.B. Syracuse University 1899	Buffalo, N. Y. History	57 Park st.
Stephen Alexander Bennett, B.A. Talladega College 1900	Birmingham, Ala. Mathematics	108 Dixwell av.
James Wilson Bixler, B.A. Amherst College 1882	New London, Conn. Social Science	New London
Henry Davenport Blackwell, B.A. Randolph-Macon College 1890	Bethel Academy, Va. English	19 Sylvan av.
John Charles Blake, B.S. University of Colorado 1901	Boulder, Colo. Chemistry	514 George st.
Stanley Francis Blomfield, B.A. Olivet College 1895, B.A. Yale University 1899	Stony Creek, Conn. Biblical Literature	Stony Creek

John Joseph Blythe, M.A. Ohio Wesleyan University 1897, B.D. West. Theol. Coll., Montreal, 1899	Montreal, Canada	Bridgeport Biblical Literature
Harold Cornelius Bradley, B.A. University of California 1900	Berkeley, Cal.	333 York st. Chemistry
Margaret Rooker Bradshaw, M.A. Vanderbilt University 1893	Brookfield, Mo.	33 Howe st. English
Edward Dudley Bradstreet, B.A. Yale University 1901	Meriden, Conn.	Meriden Fine Arts
Halbert Hains Britan, B.A. Hanover College 1898	Hanover, Ind.	29 High st. Philosophy
Wilton Everett Britton, B.S. New Hampshire College Agric. 1893	New Haven, Conn.	1317 Boulevard Botany
Howard Logan Bronson, B.A. Yale University 1900	New Haven, Conn.	1233 Chapel st. Physics
James Ansel Brooks, PH.B. Yale University 1898, M.E. 1901	Derby, Conn.	Derby Mathematics
Samuel Palmer Brooks, B.A. Yale University 1894	Waco, Tex.	486 Elm st. History
Lester Dorman Brown, B.A. University of Wooster 1894	Wooster, O.	73 Lake pl. Classics
Abraham Royer Brubacher, B.A. Yale University 1897	Shaefferstown, Pa.	20 Carmel st. Classics
Frank Egbert Bryant, B.L. University of Michigan 1899	Grand Rapids, Mich.	59 Dixwell av. English
Winthrop Buck, B.A. Yale University 1900	Nazareth, Pa.	A. History
Frank Scott Bunnell, B.A. Yale University 1894	Stratford, Conn.	361 Elm st. Classics
Frederick Merwin Burgess, B.A. Yale University 1897	New Haven, Conn.	274 Dixwell av. English
Katharine Jeannette Bush, PH.D. Yale University 1901	New Haven, Conn.	133 Howe st. Natural Science
Marian Dickinson Campbell, B.A. Radcliffe College 1899	Middlefield, Conn.	331 Temple st. English
Sherman Campbell, B.A. Harvard University 1899	Cambridge, Mass.	Norwalk Classics
Mabel Augusta Canada, B.A. Mt. Holyoke College 1900	New Haven, Conn.	Westville English

Henry Seidel Canby, PH.B. Yale University 1899	Wilmington, Del. English	701 W. D.
Frederic James Carnell, PH.B. Yale University 1900	Bristol, Conn. Physics	58 N. S. H.
Otho Grandford Cartwright, B.A. Yale University 1893, M.A. 1901	New Haven, Conn. History	119 Wall st.
Lacey Davis Caskey, B.A. Yale University 1901	Yonkers, N. Y. Greek	593 P.
Andrew Burns Chalmers, B.A. Eureka College 1889	New Haven, Conn. Biblical Literature	88 E. Pearl st.
John Bullard Chamberlain, B.A. Yale University 1901	Unionville, Conn. History	685 W. D.
William Woods Chandler, B.A. Yale University 1896	New Haven, Conn. Music	21 High st.
Herman Haupt Chapman, B.AGR. University of Minnesota 1897	Grand Rapids, Minn. Mineralogy	188 Dixwell av.
Alice White Chase, B.A. Colby College 1899	Buckfield, Me. English	1193 Chapel st.
Frederick Mortimer Clapp, B.A. Yale University 1901	New York City English	597 P.
Alexander Ray Clark, Jr., B.A. Yale University 1895	New York City Economics	A.
Clarence Carroll Clark, B.A. Johns Hopkins University 1896	Baltimore, Md. English	26 Edgewood av.
John Putnam Clark, M.A. Tufts College 1900	Meriden, Conn. History	Meriden
Thadeous Hugh Claypool, B.A. Yale University 1898	Marshall, Tex. English	486 Elm st.
George Lemon Clothier, M.S. Kansas State Agric. Coll.	Vera, Kans. Zoology	188 Dixwell av.
Frederick Sears Coe, PH.B. Yale University 1899	Newark, N. J. Mechanical Engineering	A.
William Sloane Coffin, B.A. Yale University 1900	New York City Political and Social Science	A.
Winfield Hazlitt Collins, B.A. Western Maryland College 1894, M.A. Yale University 1900	Reeds Grove, Md. History and English	342 George st.
Paul Brainard Condit, PH.B. Yale University 1901	Cleveland, O. Mineralogy	98 York sq.

Henry H. Conover, B.S. Rutgers College 1900	New Brunswick, N. J. 120 York st. Mathematics
Frank Cummings Cook, B.A. Yale University 1900	Waterbury, Conn. 333 York st. Natural Science
Albert Williams Cooper, B.A. Harvard University 1901	Boston, Mass. 108 High st. Botany
Carl Guy Crawford, B.S. Ohio Wesleyan Univ. 1898	Parrytown, O. Sherland av. Mineralogy
Francis Cross, B.A. Yale University 1900	New Haven, Conn. 156 Spring st. Classics
Edgar Roscoe Cumings, B.A. Union College 1897	Madison, O. 22 Whalley av. Paleontology
James Elbert Cutler, B.A. University of Colorado 1900	Boulder, Colo. 373 Crown st. Political and Social Science
George Barton Cutten, B.A. Yale University 1897	Amherst, Nova Scotia 80 First st. Philosophy
Enid Daniel, B.S. Lebanon Valley College 1900	Philadelphia, Pa. 64 Howe st. Philosophy
Albert Sargent Davis, B.A. Yale University 1896	New York City A. English
Caroline Means Davis, B.A. Wellesley College 1897	New Haven, Conn. 336 Humphrey st. Pedagogy
Frederick Lincoln Davis, B.A. New York University 1888, B.D. Union Theol. Sem. 1891	New Bedford, Mass. 769 E. D. Biblical Literature
Clarence Shepard Day, Jr., B.A. Yale University 1896	New York City A. English
George Parmly Day, B.A. Yale University 1897	New York City A. English
Arthur Lyman Dean, B.A. Harvard University 1900	Dedham, Mass. 140 Shelton av. Physiology and Physiol. Chemistry
Charles Mills DeForest, B.A. Yale University 1901	New Haven, Conn. 387 Temple st. History
Teizaburo Demura Tohoku Gakuin 1893, Sendai Theological Seminary 1896, B.D. Pacific Theological Seminary 1901	Sendai, Japan 710 W. D. Biblical Literature
Justus Gerhard Dettmer, B.A. Yale University 1901	Brooklyn, N. Y. 658 W. D. English

Ella Marinda Deyo, B.A. Mt. Holyoke College 1897	<i>Honeoye, N. Y.</i> 1239 Chapel st. Classics
Sherwood Owen Dickerman, B.A. Yale University 1896	<i>New Haven, Conn.</i> 140 Cottage st. Classics
William Frederick Dickerman, M.A. Florida University 1885	<i>New Haven, Conn.</i> 276 Orange st. Geology
John Casper Diehl, B.A. Yale University 1887	<i>Erie, Pa.</i> A. Latin
Edward Lewis Dodd, B.A. Adelbert College 1897	<i>Cleveland, O.</i> 80 Stanley st. Mathematics
Louise Dodge, PH.D. Yale University 1900	<i>Danvers, Mass.</i> Norwich Classics
Peter Tracy Dondlinger, B.A. National Normal University 1899	<i>Lebanon, O.</i> 59 Prospect st. Political and Social Science
Joseph William Dows, B.A. Brown University 1899	<i>Providence, R. I.</i> Wallingford Mineralogy
Samuel William Dudley, PH.B. Yale University 1900	<i>Westville, Conn.</i> Westville Mechanical Engineering
Jacob Duhan, PH.B. Yale University 1901	<i>New Haven, Conn.</i> 1136 State st. Civil Engineering
Ellen Duncan, B.L. Baylor University 1897, M.L. Baylor University 1900	<i>Waco, Tex.</i> 486 Elm st. English
Edward Lewis Durfee, B.A. Yale University 1896	<i>Palmyra, N. Y.</i> 31 Lake pl. History
Broer Doekele Dykstra, B.A. Hope College 1896	<i>Sioux Center, Iowa</i> 55 Broadway Philosophy
Allen Barber Eaton, PH.B. Beloit College 1899	<i>Beloit, Wisc.</i> 88 Lake pl. Political and Social Science
Richard Henry Edwards, B.A. Yale University 1901	<i>Lisle, N. Y.</i> Dwight Hall Biblical Literature
Clara Eliza Emerson, B.A. Wellesley College 1891	<i>Beloit, Wisc.</i> 84 Norton st. English
Sara Anna Emerson, B.A. Boston University 1877	<i>Watertown, Mass.</i> 79 Howe st. Biblical Literature
Frederick Joy Fairbank, B.A. Illinois College 1897, M.A. Yale University 1901	<i>Jacksonville, Ill.</i> 608 E. D. Latin
Arthur Henry Ralph Fairchild, B.A. University of Toronto 1900	<i>Toronto, Canada</i> 373 Crown st. English

Fred Rogers Fairchild, B.A. Doane College 1898	Crete, Nebr. Political Economy	47 Lake pl.
Hollon Augustine Farr, B.A. Yale University 1896	Athol, Mass. German	170 F.
George Willis Field, B.A. Yale University 1899	New York City English	A.
Joseph Fogelberg, B.S. Bethany College 1899	Lindsborg, Kans. German	149 St. John st.
Emily Howard Foley, B.A. Wellesley College 1893	St. Louis, Mo. English	84 Wall st.
Edwin Horace Forbes, PH.D. Yale University 1895	Torrington, Conn. Geology and Astronomy	Torrington
Guy Stanton Ford, B.L. University of Wisconsin 1895	Plainfield, Iowa Italian	47 Lake pl.
William Ebenezer Ford, Jr., PH.B. Yale University 1899	New Haven, Conn. Mineralogy	16 Lynwood pl.
George Levi Fox, B.A. Yale University 1874, M.A. Yale University 1885	New Haven, Conn. Classics	7 College st.
Hubert Bruce Fuller, B.A. Columbian University 1900, Yale University 1901	Washington, D. C. History	A.
Charles Anthony Fulton-Phizenmayer, LL.B. Yale University 1901	New York City Political and Social Science	1151 Chapel st.
Ruth Louise Gaines, B.A. Smith College 1901	Austin, Tex. English	1193 Chapel st.
Stanley Leman Galpin, B.A. Western Reserve University 1901	New Haven, Conn. Romance Languages	434 Edgewood av.
Winifred Stowe Galpin, PH.B. Western Reserve Womens College 1901	New Haven, Conn. Romance Languages.	434 Edgewood av.
Arthur James Gammack, B.A. Trinity College, Toronto 1891	West Haven, Conn. Sociology	West Haven
Wesley John Gardner, B.A. Harvard University 1900	Helena, Mont. Zoology	53 Lake pl.
Milton Stahl Garver, B.A. Western Reserve University 1901	Navarre, O. Romance Languages	217 York st.
Ambrose Gherini, B.A. Mt. Angel College 1899	San Francisco, Cal. Political and Social Science	404 Crown st.

Fred Macdonald Gilbert, B.A. Yale University 1898	Brooklyn, N. Y. Biblical Literature	A.
Ralph Davis Gilbert, B.S. Boston University 1900	Gilead, Conn. Chemistry	Kent Lab'y
Hiram Gillespie, B.A. University of Chicago 1898	Lincoln, Ill. Classics	362 Whalley av.
Edward Franklin Goin, B.A. Flak University 1898, B.D. Oberlin Theological Seminary	New Haven, Conn. Biblical Literature	108 Dixwell av.
Thomas Warrington Gosling, B.A. Yale University 1894	Cincinnati, O. English	A.
Benjamin Spencer Gowen, B.A. Yale University 1901	Winchester, Tenn. Philosophy	27 Sylvan av.
Thomas Ezekiel Gravatt, B.S. Rutgers College 1897	Clarksburgh, N. J. Mathematics	73 Lake pl.
Arthur Harmount Graves, B.A. Yale University 1900	Hartford, Conn. Botany	51 N. S. H.
Albert Gubelmann, B.A. University of Rochester 1897, M.A. University of Rochester 1897	Rochester, N. Y. German	12 Broad st.
Harvey Hugo Guy, B.A. Drake University 1893	Tokyo, Japan Biblical Literature	696 W. D.
Frank Eugene Hale, B.A. Yale University 1900	Hartford, Conn. Chemistry	362 Orchard st.
Francis Jenks Hall, B.A. Yale University 1899	Clatskanie, Oregon Biblical Literature	A.
Herbert Franklin Hamilton, B.A. Amherst College 1897, M.A. Yale University 1899	Greenfield, Mass. English	137 Dwight st.
William Frederick Hamilton, B.A. Yale University 1901	New Haven, Conn. Philosophy	131 Wash'n av.
Alice Bradford Hammond, B.A. Bryn Mawr College 1898	New Haven, Conn. History	43 Orchard st.
George Arthur Hanford, B.A. Yale University 1898	Syracuse, N. Y. Physiology and Physiol. Chemistry	2 Hillhouse av.
Henry Lee Hargrove, B.A. University of Nashville 1891, M.A. Univ. of Nashville 1892	Waco, Tex. English	723 Elm st.
Pinkney Settle Hargrove, B.A. Yale University 1900	Waco, Tex. English	362 Orchard st.

Nathaniel Harris, B.A. Baylor University 1900, M.A. Baylor University 1901	Waco, Tex. Political and Social Science	486 Elm st.
Frederick Brown Harrison, PH.B. Yale University 1899	New Haven, Conn. English	83 Grove st.
Charles Montgomery Hathaway, Jr., B.A. Yale University 1899, M.A. Yale University 1901	Olyphant, Pa. English	648 E. D.
Ernest Hausberg, B.A. Yale University 1901	Charles City, Iowa English	A.
Austin Foster Hawes, B.A. Tufts College 1901	Somerville, Mass. Botany	74 Lake pl.
Edgar Laing Heermance, B.A. Yale University 1897, M.A. Yale University 1899, B.D. 1901	New Haven, Conn. Biblical Literature	617 E. D.
Aurelia Isabel Henry, B.L. University of California 1898	Berkeley, Cal. English	82 York sq.
George Garr Henry, B.A. Yale University 1901	Washington, D. C. English	A.
William Beck Hills, B.A. Yale University 1900	Orange, N. J. Fine Arts	722 W. D.
Frank Hinckley, B.A. Harvard University 1896	Bangor, Me. Mineralogy	38 Mansfield st.
Robert Taylor Hinton, B.A. Yale University 1900	Paris, Ky. Social Science and History	686 W. D.
Robert Reynolds Hitt, B.A. Yale University 1898	Washington, D. C. English	A.
Mary Kathrene Hoffmeier, B.A. Mt. Holyoke College 1901	Mt. Pleasant, Md. Classics	37 Howe st.
Frederick Augustus Holden, B.A. Amherst College 1878	Morris, Conn. Biblical Literature	Morris
Louis Halsey Holden, B.A. Yale University 1895, M.A. Columbia University 1897, B.D. Union Theological Seminary 1898	Waterbury, Conn. Biblical Literature	Waterbury
George Clay Hollister, B.A. Yale University 1896	New York City Economics	A.
Felix Renouf Holt, B.A. Western Maryland College 1901	Westminster, Md. Botany	55 Prospect st.

Joseph Frazer Hood, B.A. Southwestern Presb. Univ. 1896, M.A. Yale University 1900	<i>Tupelo, Miss.</i> Philosophy	1136 Chapel st.	
Gerard Beekman Hoppin, B.A. Yale University 1891	<i>New York City</i> English		A.
May Engstrom Hoss, B.A. Baker University 1889, B.A. Kansas Univ. 1901	<i>Lawrence, Kans.</i> English	20 Eld st.	
Albert Kemp Hubbard, PH.B. Yale University 1901	<i>Kane, Pa.</i> Mathematics	113 College st.	
Clara Marvin Hubbell, B.A. Smith College 1887	<i>Detroit, Mich.</i> English	409 Orange st.	
William Southworth Hunt, B.A. Yale University 1901	<i>Newark, N. J.</i> English		A.
Edwin Lorenzo Howell Hutchinson, B.A. Yale University 1901	<i>Quogue, N. Y.</i> Electricity	706 W. D.	
Wallace Irving Hutchinson, B.A. Acadia College 1901	<i>Wolfville, N. S.</i> Botany	203 Dixwell av.	
William Albert Hyde, PH.B. Yale University 1901	<i>North Haven, Conn.</i> Physics	659 W. D.	
Lola LaMotte Iddings, B.A. Vassar College 1889	<i>Orange, N. J.</i> English	Orange	
George Samuel Jamieson, PH.B. Yale University 1901	<i>Bridgeport, Conn.</i> Chemistry		S. L.
Wilhelm Julius Edward Jente, B.A. Yale University 1897	<i>New Haven, Conn.</i> German	97 Bristol st.	
Carl Wilhelm Johnson, B.A. Bethany College 1900	<i>Lindsborg, Kans.</i> German	33 Lock st.	
Hjalmar Philip Johnson, B.A. Bethany College 1901	<i>Lindsborg, Kans.</i> English	79 Ashmun st.	
Eva Soule Jones, B.A. Wells College 1897	<i>New Haven, Conn.</i> English	387 Edgewood av.	
Frank Oscar Jones, B.A. Brown University 1897	<i>New Haven, Conn.</i> Philosophy	387 Edgewood av.	
Riveda Harding Jordan, B.A. Yale University 1893	<i>St. Joseph, Mo.</i> English		A.
Arthur Brown Joy, B.A. St. Lawrence University 1898	<i>Meriden, Conn.</i> Latin	Meriden	
Henry Pratt Judd, B.A. Yale University 1901	<i>Honolulu, H. I.</i> History	654 E. D.	

Jiroku Kawabe Doshisha College, Japan, 1893, M.A. Yale University 1900	<i>Kyoto, Japan</i>	6 Trumbull st. Philosophy
Robert Henry Keener, B.A. Yale University 1899, M.A. Yale University 1901	<i>St. Joseph, Mo.</i>	362 Whalley av. Greek
Charles Alexis Kellogg, Jr., B.A. Yale University 1900	<i>Carthage, Mo.</i>	293 York st. English
John Bolton Kelso, B.A. Washington and Jefferson College 1894, Ph.D. Univ. of Leipzig 1901	<i>Allegheny, Pa.</i>	128 Howe st. History
Virginia Wadlow Kennedy, B.A. Woman's College of Baltimore 1896	<i>Charlestown, W. Va.</i>	37 Howe st. English
Edwin Burruss King, B.A. Yale University 1898	<i>Southboro, Mass.</i>	A. English
Clarence Mahlon Kline, Ph.B. Yale University 1901	<i>Germantown, Pa.</i>	133 College st. Physiology and Physiol. Chemistry
Arthur Potter Knight, Ph.B. Yale University 1900	<i>Rome, N. Y.</i>	98 York st. Civil Engineering
Elers Koch, B.S. Montana State College 1901	<i>Bozeman, Mont.</i>	55 Prospect st. Modern Languages
Beverly Waugh Kunkel, Ph.B. Yale University 1901	<i>Harrisburg, Pa.</i>	111 Grove st. Biology
Philip Henry Kunzig, LL.B. Yale University 1901	<i>Philadelphia, Pa.</i>	1151 Chapel st. Political and Social Science
Yashihiko Kurata Kelogijiku College 1897	<i>Nagato, Hagi, Japan</i>	6 Trumbull st. Political Economy
Frederick Lent, B.A. Brown University 1900	<i>New Bedford, Mass.</i>	406 Humphrey st. Biblical Literature
Annie Maria Leonard, B.A. Wellesley College 1895	<i>Taunton, Mass.</i>	30 Academy st. Pedagogics
Oliver Clarence Lester, B.A. Central College 1897, M.A. Central College 1898	<i>Fayette, Mo.</i>	384 Crown st. Mathematics and Physics
Edwin Colby Lewis, B.A. Yale University 1901	<i>St. Johnsbury, Vt.</i>	A. Economics
Herbert Norton Loomis, B.S. Harvard University 1901	<i>New Haven, Conn.</i>	18 Ward st. Mineralogy
George Blakeman Lovell, B.A. Yale University 1901	<i>New Haven, Conn.</i>	280½ Elm st. Modern Languages

Gilbert Lovell, B.A. Yale University 1900	Plainfield, N. J. Biblical Literature	A.
Frederick Bliss Luquiens, B.A. Yale University 1897	New Haven, Conn. Paris, France Romance Languages	
Adam Ruth Lutz, B.A. Franklin and Marshall College 1896	Strasburg, Pa. Bethlehem Biblical Literature	
Oliver Perry McAuley, B.A. Valparaiso College 1887, M.A. Valparaiso College 1894	Valparaiso, Ind. 66 Whitney av. History	
Frank Mitchell McClenahan, B.A. Yale University 1900, M.A. Yale University 1901	Allegheny City, Pa. 131 Dwight st. Chemistry	
Theodore Dwight McDonald, B.A. Yale University 1897	New York City English	A.
Raymond McFarland, B.A. Amherst College 1897	Lamoine, Me. 19 Sylvan av. History	
Washiro Maki Doshisha College, Japan, 1892	Yamanashi-Ken, Japan 388 Crown st. Philosophy	
Milton Mozart Marble, B.A. Harvard University 1889	New Haven, Conn. 1589 Chapel st. Mineralogy	
Jesse Marhoff, B.A. Olivet College 1897, B.D. McCormick Theological Sem. 1900	Galesburg, Mich. 56 Whalley av. Biblical Literature	
William H. Mast, B.AGR. Iowa State College 1901	Agency, Iowa 203 Dixwell av. Botany	
Otojiro Matsuo Doshisha College 1889	Tokyo, Japan 6 Trumbull st. Economics	
Herbert Edwin Medway, B.A. Yale University 1900	Scranton, Pa. 333 York st. Chemistry	
Henry Franklin Merriam, PH.B. Yale University 1900	Summit, N. J. 162 S. L. Chemistry	
Edward DeWitt Merriman, B.A. Yale University 1872	New Haven, Conn. 154 Elm st. History	
Alfred Kindred Merritt, B.A. Yale University 1893	Brainerd, Minn. 53 V. Economics	
Walter Eugene Meyer, B.A. Yale University 1901	New York City English	A.
Kumazo Mikami, B.D. Trinity College, Japan, 1890	Tokyo, Japan 6 Trumbull st. Political and Social Science	

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|---|----------------------------|------------------------------|----|
| Ellie James Sabastian Moore, B.S. | <i>Bozeman, Mont.</i> | 35 Townsend st. | |
| Montana State College 1901 | | Botany | |
| Jitaro Mori | <i>Iyo, Japan</i> | 388 Crown st. | |
| Doshisha College 1894 | | Political and Social Science | |
| James Gasherie DeWitt Morrell, PH.B. | <i>Hartford, Conn.</i> | | A. |
| Yale University 1900 | | Mechanical Engineering | |
| Oliver Cromwell Morse, B.A. | <i>Winter Park, Fla.</i> | | A. |
| Yale University 1868 | | Biblical Literature | |
| Russell Mott, B.A. | <i>Michigan City, Ind.</i> | | A. |
| Yale University 1901 | | English | |
| Tsutomu Murata | <i>Kyoto, Japan</i> | 708 W. D. | |
| Doshisha College 1887 | | Biblical Literature | |
| Herbert Spencer Murch, B.A. | <i>Coburg, Oregon</i> | 78 Lake pl. | |
| University of Oregon 1898 | | English | |
| Watson Nicholson, B.A. | <i>Redlands, Cal.</i> | 341 Crown st. | |
| Leland Stanford Jr. Univ. 1892,
M.A. Harvard Univ. 1895 | | English | |
| Nariyoshi Nishiike | <i>Kyoto, Japan</i> | 388 Crown st. | |
| Doshisha College 1893 | | Economics | |
| Iver Olson Nysether, B.A. | <i>Yankton, S. D.</i> | 399 B. | |
| Yankton College 1900 | | Mathematics and History | |
| Herman Parker Olcott, B.A. | <i>New York City</i> | 658 W. D. | |
| Yale University 1901 | | English and Spanish | |
| Edgar Hammond Olmstead, B.A. | <i>Cleveland, O.</i> | 34 Sherman av. | |
| Tri-State Normal College 1893,
B.D. Oberlin Theol. Sem. 1899 | | Biblical Literature | |
| Julius Olsen, B.S. | <i>Norway, Kans.</i> | 159 Elm st. | |
| Bethany College 1898 | | Mathematical Physics | |
| Shigekichi Omura, B.A. | <i>Fukuoka Ken, Japan</i> | 337 Orange st. | |
| Denver University 1899 | | Philosophy | |
| Herman Max Opitz, B.A. | <i>Norwich, Conn.</i> | 373 Crown st. | |
| Yale University 1900 | | German | |
| Rufus Melvin Overlander, B.A. | <i>New Haven, Conn.</i> | 373 Crown st. | |
| Yale University 1898 | | Economics | |
| Jennie Alice Park, B.S. | <i>Exeter, Conn.</i> | 70 Howe st. | |
| Mt. Holyoke College 1896 | | Mathematics | |
| Mary Isabel Park, B.A. | <i>Exeter, Conn.</i> | Berlin | |
| Mt. Holyoke College 1893 | | Philosophy | |
| Roger Crossman Peck, B.A. | <i>N. Bennington, Vt.</i> | 662 W. D. | |
| Yale University 1900 | | Physiological Chemistry | |

Arthur Bradley Peebles, B.S. Michigan Agricultural Coll. 1877. S.D. Oberlin Theol. Sem. 1882	Storrs, Conn. Chemistry	Storrs
Henry Augustus Perkins, B.A. Yale University 1896, E.E. and M.A. Columbia Univ. 1899	Hartford, Conn. Mathematics and Physics	128 Wall st.
James Girvin Peters, B.A. Johns Hopkins University 1900	Baltimore, Md. Botany	113 Wall st.
Lemuel Gardner Pettee, B.A. Yale University 1898	Simsbury, Conn. Economics	A.
Charles Davis Platt, B.A. Williams College 1877	Wallingford, Conn. English	Wallingford
William Lorimer Porter, B.A. Yale University 1900	Winterset, Iowa Natural Science	131 Dwight st.
Sylvester David Powell, B.A. Yale University 1901	Easton, Conn. History	27 Wooster pl.
William Sumner Pritchard, B.A. Yale University 1901	New Haven, Conn. Economics	374 W.H.
Oscar Stoddard Pulman, Jr., B.A. Yale University 1900	Albany, N. Y. Chemistry	Kent Lab'y
Ernest Martin Quittmeyer, B.A. Wesleyan University 1899, M.A. Yale University 1901	Bridgeport, Conn. Philosophy	Bridgeport
Edward Everett Rall, B.A. University of Iowa 1900	Cedar Falls, Iowa Philosophy	224 Oak pl.
Lillian Lovina Ramsdell, PH.B. University of Chicago 1900	Milo, Me. English	Wallingford
John Arthur Ray, B.A. Baylor University 1898, B.A. Yale University 1899	Waco, Tex. German	A.
Leo Frederick Rettger, B.A. Indiana University 1896, M.A. Indiana University 1897	Bloomington, Ind. Physiology and Physiol. Chemistry	608 E. D.
Chauncey Brewster Rice, PH.B. Yale University 1894, PH.D. 1901	New Haven, Conn. Physics	56 N. S. H.
John Pierrepont Rice, B.A. Yale University 1900, M.A. Yale University 1901	Santa Barbara, Cal. English and Modern Languages	636 E. D.
William Chauncey Rice, B.A. Wesleyan University 1901	Springfield, Mass. History	94 York sq.

- Robert Kilburn Richardson, B.A. *New Haven, Conn.* 384 Whitney av.
Yale University 1898, History
M.A. Columbia University 1899
- Isaac Woodbridge Riley, B.A. *New Haven, Conn.* 281 Willow st.
Yale University 1892 Philosophy
- Allan Douglas Risteen, B.S. *Hartford, Conn.* Hartford
Worcester Polytechnic Institute 1885 Mathematical Physics
- Frederick Oscar Robbins, B.A. *New Haven, Conn.* 341 Winthrop av.
Yale University 1896 Romance Languages
- William Spence Robertson, B.L. *Oxford, Wisc.* 47 Lake pl.
University of Wisconsin 1899 History
- Chalfant Robinson, B.L. *New Haven, Conn.* 68 Trumbull st.
University of Cincinnati 1893 History
- Henry Hollister Robinson, PH.B. *Hartford, Conn.* 333 York st.
Yale University 1895 Natural Science
- Maurice Henry Robinson, B.L. *Madelia, Minn.* 77 Mansfield st.
Dartmouth College 1890, Political and Social Science
M.A. Dartmouth College 1897
- Edith Antoinette Rockwell, B.L. *New Haven, Conn.* 281 Crown st.
Smith College 1896 English
- Robert Kilburn Root, B.A. *New Haven, Conn.* 26 Edgewood av.
Yale University 1898 English
- William Dunn Ryan, B.A. *Des Moines, Iowa.* 115 Greene st.
Drake University 1898, Biblical Literature
M.A. West Virginia Univ. 1901
- Charles Edward Sargent, M.A. *New Haven, Conn.* 20 Eld st.
Bates College 1883 Political and Social Science
- Rudolph Schwill, B.A. *New York City* 90 S. M.
Yale University 1896, Romance Literature
PH.D. University of Munich 1898
- Louis Henry Schutte, B.A. *Chicago, Ill.* 379 Crown st.
Yale University 1899 Classics
- Ennis Newton Searles, PH.B. *New Haven, Conn.* 297 Sherman av.
Yale University 1891 Chemistry and Biology
- Clara Sellards, M.A. *Scranton, Kans.* 70 Howe st.
University of Kansas 1901 Latin
- Elias Howard Sellards, B.A. *Lawrence, Kans.* 22 Whalley av.
Univ. of Kansas 1899, M.A. 1900 Palaeontology
- Augustus Farnham Shaw, B.A. *Sao Paulo, Brasil* 68 Whalley av.
Yale University 1892 Chemistry

Hubert Gibson Shearin, B.A. Center College 1897, M.A. Center College 1899	<i>Dansville, Ky.</i> English	46 Lake pl.
William Kent Shepard, PH.D. Yale University 1900	<i>New Haven, Conn.</i> Mathematics	57 N. S. H.
Susan Smith Sheridan, B.A. University of Omaha 1897	<i>New Haven, Conn.</i> English	519 Orange st.
Schino Shibata, B.A. Kelogijiku University 1901	<i>Tokyo, Japan</i> Philosophy	363 Crown st.
Franklin Victory Sikes, B.A. Yale University 1900	<i>Suffield, Conn.</i> Fine Arts	333 York st.
Barry Congar Smith, B.A. Yale University 1899	<i>New York City</i> History	A.
Burke Smith, B.S. University of Washington 1899	<i>Auburn, Wash.</i> Mathematics	1136 Chapel st.
Clara Eliza Smith Mt. Holyoke College 1885	<i>Northford, Conn.</i> Mathematics	577 Elm st.
Ernest Walker Smith, B.A. Yale University 1901	<i>Farmington, Conn.</i> English	A.
James Robinson Smith, B.A. Yale University 1898	<i>Hartford, Conn.</i> English	Whitneyville
Sarah Elizabeth Marquand Smoot, B.A. University of California 1899	<i>Windsor, Vt.</i> English	77 Howe st.
Samuel Newton Spring, B.A. Yale University 1898	<i>New Haven, Conn.</i> Botany	46 Edgewood av.
Oscar Emil Staaf, B.A. Bethany College 1900	<i>Lindsborg, Kans.</i> Latin	88 Prospect st.
Frederick Clark Stanley, B.A. Williams College 1893	<i>Bridgeport, Conn.</i> Chemistry	Bridgeport
Joannes Gabriel Statiropoulos, B.A. Anatolia College 1899	<i>Germir, Asia Minor</i> Natural Science	2 Hillhouse av.
William Dent Sterrett, B.A. Harvard University 1901	<i>Washington, D. C.</i> Botany	108 High st.
William Oliver Stevens, B.A. Colby College 1899	<i>Moulmein, Burma</i> English	139 Dwight st.
Jay Thomas Stocking, B.A. Amherst College 1895, B.D. Yale University 1901	<i>Canton, N. Y.</i> Biblical Literature	627 E. D.
Lyman Brumbaugh Stookey, B.A. Yale University 1900	<i>Belleville, Ill.</i> Physiology and Physiol. Chemistry	652 E. D.

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|---|---|
| Paul Moore Strayer
Baltimore City College 1892 | <i>So. Norwalk, Conn.</i> <i>So. Norwalk</i>
Biblical Literature and Semitic Languages |
| Karl Eben Stromquist, B.S.
Bethany College 1899 | <i>McPherson, Kans.</i> 59 Prospect st.
Mathematics |
| Edward Arthur Sumner, B.A.
Wesleyan University 1878 | <i>New York City</i> <i>New York City</i>
Economics |
| George Sverdrup, B.A.
Augsburg Seminary 1898 | <i>Minneapolis, Minn.</i> 222 Crown st.
Semitic Languages |
| Teizaburo Takahashi
Rikkyo-Gakko 1879,
M.A. Yale University 1901 | <i>Tokyo, Japan</i> 388 Crown st.
Social Science |
| Yoshio Takarayama
Imperial University of Japan 1896 | <i>Kyoto, Japan</i> 6 Trumbull st.
Philosophy |
| John Frelinghuysen Talmage, B.A.
Yale University 1895 | <i>New York City</i> <i>A.</i>
English |
| Kazusada Tanaka
Kelogijiku University 1897 | <i>Tsuruoka, Japan</i> 363 Crown st.
Political and Social Science |
| Leonard Merrige Tarr, B.A.
Bates College 1882,
M.A. Yale University 1901 | <i>New Haven, Conn.</i> 156 Whalley av.
Physics |
| Edwy Lycurgus Taylor, Jr., PH.B.
Yale University 1901 | <i>Albany, N. Y.</i> 133 Wall st.
Mathematics |
| Wyatt Warner Taylor, PH.B.
Yale University 1900 | <i>Stamford, Conn.</i> <i>A.</i>
Mechanical Engineering |
| John Martin Telleen, B.A.
Augustana College 1898 | <i>Rock Island, Ill.</i> 17 Elmwood av.
English |
| Lucy Elizabeth Textor, PH.B.
University of Michigan 1894,
M.A. Leland Stanford Jr. Univ. 1895 | <i>Chicago, Ill.</i> 114 Greene st.
History |
| Elbert Nevius Sèbring Thompson, B.A.
Yale University 1900 | <i>New Haven, Conn.</i> 95 Whalley av.
English |
| Edward Thorstenberg, B.A.
Bethany College 1899 | <i>Assaria, Kans.</i> 59 Prospect st.
German |
| Harry Donald Tiemann, M.E.
Stevens Institute of Technology 1897 | <i>Brooklyn, N. Y.</i> 35 Townsend st.
Botany |
| Chauncey Brewster Tinker, B.A.
Yale University 1899,
M.A. Yale University 1901 | <i>Denver, Colo.</i> 260 Crown st.
English |

Edson Newton Tuckey, B.A. Hamlin College, 1893	<i>St. Paul, Minn.</i> 22 Lynwood pl. Economics
Edgar Collins Tullar, B.A. Albion College, 1897	<i>Seymour, Conn.</i> Seymour Biblical Literature
Edwin Hotchkiss Tuttle, B.A. Yale University 1901	<i>New Haven, Conn.</i> 217 Mansfield st. Philosophy
Mabelle Morris Ufford, B.L. Smith College 1899	<i>New Haven, Conn.</i> 57 Grove st. English
Frank Pell Underhill, PH.B. Yale University 1900	<i>Norwalk, Conn.</i> 57 Prospect st. Physiology and Physiol. Chemistry
Albert William VanBuren, B.A. Yale University 1900	<i>New Haven, Conn.</i> 261 Orange st. Classics
John Abert VanGroos, B.S. Oregon Agricultural College 1899	<i>Eugene, Oregon</i> 133 Main st. Mathematics
Ralph Gibbs VanName, B.A. Yale University 1899	<i>New Haven, Conn.</i> 121 High st. Chemistry
Harold Vernon, B.A. Yale University 1883	<i>New York City</i> A. Social Science
Charles Vernon Vickrey, PH.B. Nebraska Wesleyan University 1896	<i>Bartley, Nebr.</i> 625 E. D. History
John Armstrong Wade, B.A. Yale University 1899, B.D. Yale University 1901	<i>Brooklyn, N. Y.</i> 687 W. D. Biblical Literature
Charles Philip Wagner, B.A. Yale University 1899	<i>Putnam, Conn.</i> Paris, France Romance Languages
Dana Lewis Walcott, B.A. Yale University 1901	<i>Rutherford, N. J.</i> 706 W. D. Modern Languages
Curtis Howe Walker, B.A. Yale University 1899	<i>New Haven, Conn.</i> 651 E. D. History
John Edward Wallace Wallin, B.A. Augustana College 1897, M.A. Yale University 1899, PH.D. 1901	<i>Stanton, Iowa</i> 97 William st. Philosophy
Arthur Gustavus Ward, B.A. Yale University 1900	<i>Evans Mills, N. Y.</i> 571 P. German
Albert Micajah Webb, B.A. Yale University 1901	<i>Bell Buckle, Tenn.</i> 293 York st. Romance Languages
Moses Cook Welch, B.A. Yale University 1850	<i>Hartford, Conn.</i> Hartford Biblical Literature

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|---|--|
| Charles Heald Weller, B.A.
Yale University 1895 | <i>New Haven, Conn.</i> 382 Crown st.
Classics |
| Mary Crowell Welles, B.A.
Smith College 1883 | <i>Newington, Conn.</i> 40 Trumbull st.
Classics |
| Wilhelmus David Allen Westfall, B.A.
Yale University 1901 | <i>Montague, N. J.</i> 43 Hotchkiss st.
Mathematics |
| Sidney Adams Weston, B.A.
Yale University 1900,
M.A. Yale University 1901 | <i>Sharon, Mass.</i> 690 W. D.
Biblical Literature |
| Charles Augustus Wheeler, B.A.
Yale University 1895 | <i>Spring Hill, Conn.</i> 345 Winthrop av.
Mathematics |
| Lynde Phelps Wheeler, PH.B.
Yale University 1894 | <i>New Haven, Conn.</i> 333 York st.
Physics |
| George Benjamin White, PH.B.
Yale University 1900 | <i>Cooperstown, N. Y.</i> 667 W. D.
Physiology and Physiol. Chemistry |
| John Emery White, PH.B.
Yale University 1901 | <i>Buffalo, N. Y.</i> 82 Wall st.
Chemistry |
| Ogden Watson White, B.A.
Yale University 1901 | <i>Waterbury, Conn.</i> A.
English |
| Paul Whitin, B.A.
Yale University 1898 | <i>Northbridge, Mass.</i> A.
English |
| George Reber Wieland, B.S.
Pennsylvania State College 1893,
PH.D. Yale University 1900 | <i>Chester, Pa.</i> M.
Natural Science |
| Joseph Goodyear Wild, PH.B.
Yale University 1901 | <i>New Haven, Conn.</i> 86 Park st.
Chemistry |
| Samuel Wirt Wiley, B.A.
Monmouth College 1901 | <i>Monmouth, Ill.</i> 88 Lake pl.
Social Science |
| Arthur Collins Williams, B.A.
Yale University 1900 | <i>Hartford, Conn.</i> A.
Biblical Literature |
| De Winter, B.L.
University of California 1892,
M.A. Harvard University 1894 | <i>Berkeley, Cal.</i> 387 George st.
English |
| John William Withers, B.A.
National Normal University 1891,
PED.D. National Normal University | <i>Lebanon, O.</i> 59 Dixwell av.
Mathematics and Philosophy |
| Theodore Salisbury Woolsey, B.A.
Yale University 1901 | <i>New Haven, Conn.</i> 250 Church st.
Botany |
| Benjamin Mead Wright, B.D.
Yale University 1897 | <i>Orange, Conn.</i> Orange
English |

Henry Burt Wright, B.A.
Yale University 1898

Arthur Frederic Yaggy, B.A.
Yale University 1901

Kaiei Yamasaki
Keio Gijyuku University 1901

New Haven, Conn. 128 York st.
Classics

Hutchinson, Kans. A.
English

Tokyo, Japan 363 Crown st.
Philosophy

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CLASSICAL AND INDO-IRANIAN PHILOLOGY AND ARCHAEOLOGY

The courses given in this department are designed to meet the needs of two classes of students, those who intend to become candidates for the degree of Ph.D. and those who are able to take only a shorter period, one or two years, for graduate study, either with or without reference to the M.A. degree.

For students who expect to apply for the degree of Ph.D. a graded series of courses is offered, covering with some completeness the field of classical philology. These are arranged in three groups, courses in literature, courses in language, and courses in the contributory sciences. No one of these groups may wisely be neglected, nor is a candidate for the degree allowed to give either to Greek or to Latin alone more than three-fourths of his time.

The courses in literature are the foundation of all other work, and are most directly valuable for teaching. They are of two kinds : in the more thorough courses the student learns the methods of interpretation and gets an intimate knowledge of a small portion of an author ; the courses which cover a wider field give a general view, bring out the larger features of an author or a period, and suggest a pattern for private reading.

Most of the courses on language bear less directly upon elementary teaching, but they are useful even there, and are indispensable as a preparation for later productive work. Courses in the general principles of linguistics should be taken first, then work in comparative philology, and finally linguistic work in Greek or Latin. Sanskrit,

a knowledge of which is desirable even for students who do not intend to teach it, may profitably be taken early, in order that it may be used in other courses in this group.

The courses in special subjects are partly for method (text-criticism, source-criticism), partly for information (archaeology, metric, palaeography, history of philology). These subjects are for the most part of such a character that they cannot be studied to advantage without an instructor and a large library.

All candidates for the degree are expected to take for at least one year the work of the Seminary, both in Greek and in Latin, and in preparation for this to take some course (*e. g.*, course 41) in which text-criticism is made prominent. As the instructor and the subject and method of the Seminary change from year to year, students should attend the sessions as listeners as regularly as possible, even when they are not members of the Seminary.

In selecting from the courses here offered, a candidate for the degree should be governed by these considerations:—

(*a*) Some of the courses require a large amount of preparation, while others require little. A combination of lighter and heavier courses should be made and for this purpose the student may, at the beginning of the year, visit a large number of courses and postpone his formal registration for two or three weeks. In ordinary cases as many as twelve hours should be taken in the first year and as many as eight in the second year; the third year will be largely occupied with work upon the thesis.

(*b*) Of the courses here offered many are given only every second or every third year. So far as it is possible to do so, the omitted courses which will be given in the following years are included in the prospectus, and the student should in general plan his course of work in advance.

(*c*) The courses which are of such a character as to require a large library and the help of an instructor should receive special attention.

(d) The whole time of the student should not be given to work in courses. The habit of extensive private reading and of following current thought in philological journals should be formed early and maintained persistently. Advice and assistance in this direction will gladly be given by any instructor. A course of lectures on the use of the Library is given each year by a member of the staff of the University Library.

The degree of Ph.D. is given under the general regulations of the Graduate School (see pamphlet, p. 11). The special requirements of the classical department permit and even encourage a considerable freedom of choice and cannot therefore be defined precisely. In general, it must be understood that the degree is not granted as a certificate of residence and work, however faithful, but as an indication that the student who receives it has attained a considerable proficiency in classical philology. The evidence of such attainment is to be given in three ways :—

(a) By a thesis, which shows that the writer is capable of doing independent scientific work. The subject of the thesis should be a definite problem, of a scientific character and of somewhat limited range. It is best to postpone the selection of a subject until the latter part of the second year of graduate study, in order that the student may first come into contact with various sides of philological work. The officers of the department will be ready to advise in regard to the choice of a subject and, so far as it may properly be done, in regard to the best method of handling the material.

(b) By a list of the candidate's reading in Greek, Latin, or Sanskrit. Upon this list or any part of it and upon the ability to read Greek and Latin freely, an examination may be set at the option of the department.

(c) By an oral examination, in two parts ; first, a detailed and rigid examination upon a single author, selected by the candidate and approved by the department ; and, second, an examination upon the whole field of classical

philology. The first part of the examination tests the thoroughness of the candidate's knowledge, the second part tests its breadth and extent.

Students who can give but one year to graduate study and especially those who have been engaged in teaching are advised to devote their time mainly to learning methods of work. For this purpose one or more of the thorough courses in authors should be taken; these teach the methods of criticism and interpretation and give a practical acquaintance with the philological literature bearing upon an author. Next in importance is the selection of subject-courses, in archaeology, palaeography, linguistics, metric, grammar or syntax, one of which may become the foundation of later private study and production. Students whose time is limited are especially advised to learn to use the editions and books of reference in the library of the Classical Club and to make lists for guidance in the future purchase of books.

For the purpose of training in the methods of teaching, informal conferences are held by some of the instructors and a course of lectures is given (p. 29, course 37). See also courses 32-36. The undergraduate classes may also be visited in order to study the methods of instruction employed in Yale College.

PEABODY MUSEUM OF NATURAL HISTORY

CURATORS

CHARLES E. BEECHER, Ph.D., *Curator of the Geological Collection*

ADDISON E. VERRILL, M.A., *Curator of the Zoological Collection*

EDWARD S. DANA, Ph.D., *Curator of the Mineralogical Collection*

GEORGE F. EATON, Ph.D., *Curator of the Osteological Collection*

The first floor of the Museum building is devoted to the department of Mineralogy and to the purposes of a large lecture-room. The minerals occupy cases in the west room, the door of which fronts the entrance to the Museum. The minerals of the Gibbs collection, purchased in 1825, and the extensive accumulations since made, are here preserved and for the most part on exhibition, making it one of the largest public collections in the country. Besides minerals, the exhibition-room contains one of the most extensive collections of meteorites in the country. A large room on the same story is arranged for mineralogical and blowpipe instruction, with desks and a students' cabinet of minerals, under the charge of Professor Penfield. An adjoining room contains the laboratory of physical mineralogy; also the library and cabinet of Professor Brush, which add greatly to the means of study and investigation in Mineralogy.

The second floor is given up to Geology and Paleontology. The southern room contains the exhibition of vertebrate fossils, among which may be mentioned the skeleton of a large Dinosaur (*Claosaurus*), specimens of toothed birds, Mastodon, remains of Miocene *Brontotheridae*, Eocene *Dinocerata*, skeletons of Moas from New Zealand, and the skull of *Triceratops*, a gigantic Dinosaur from Wyoming.

The western exhibition-room is occupied mainly by a collection of invertebrate fossils, arranged zoologically.

Some of the more important exhibits are : type specimens illustrating the structure, development, and classification of Trilobites, large slabs of Crinoids from Indiana and Kansas, and many series showing the stages of growth in the Brachiopods and Corals.

Of the collection of foot-prints belonging to the University, only a few fine slabs are shown in the invertebrate exhibition-room.

The third story is occupied with the recent zoological collections, so far as there is room for their exhibition. The general invertebrate collection occupies the western room, and is noteworthy for the extensive series of sponges, corals, echinoderms, model of a large Octopus and Squid, and for special collections from New England, the Pacific Coast of America, Bermuda, Florida, etc.

The southern exhibition-room of the zoological story contains a collection of skeletons, as well as mounted and alcoholic specimens, including a nearly complete series of the vertebrate species inhabiting New England.

The second and third stories have also laboratories and work-rooms, devoted mainly to the department represented in the exhibition-rooms on the same floor. The Petrographical laboratory is likewise in the second story. The rooms contain also large collections of specimens, arranged in drawers and trays, which are open to special students in the department. Each department of the Museum has its own special library.

In the fourth story are a number of store-rooms and an Archæological collection, recently presented to the University by the late Professor Marsh.

The basement is used for work-rooms and store-rooms, and contains a vast amount of specimens, especially in the department of Paleontology and Zoology.

MINERALOGY

The department of Mineralogy occupies the first floor of the Peabody Museum. In one of the large rooms the Yale

College Collection, of which Professor Dana is curator, is placed on exhibition and is accessible at all times to the public, except on holidays and during the month of August. The collection is a very complete and valuable one, the nucleus of which is the famous Gibbs Collection, purchased by the college in 1825 from Colonel George Gibbs of Rhode Island for \$20,000. There are also on public exhibition in the cabinet-room the Yale College Collection of Meteorites and a portion of the Blum Collection of Pseudomorphs. The last-named collection is that of the late Professor J. Reinhard Blum of the University of Heidelberg, purchased by the college about thirty years ago. This collection of pseudomorphs is especially valuable, as it contains the type specimens described by Professor Blum in his book "*Die Pseudomorphosen des Mineralreichs, 1843-1879.*"

The department of Mineralogy in the Sheffield Scientific School occupies two adjoining rooms in the Museum. In one of these there are contained the private collection and library of Professor George J. Brush. Professor Brush started his mineral collection about fifty years ago, with the idea of bringing together specimens for the purpose of study and investigation, and the collection has grown to be a very extensive and valuable one. It is especially important, as it contains the type specimens of the large number of minerals which have been investigated in the chemical and mineralogical laboratories of the Sheffield Scientific School. The collection is used for the purposes of instruction in mineralogy and crystallography, and it contains much material for chemical and crystallographic investigation. In addition to the Brush collection there are collections of labeled and unlabeled specimens which are at all times accessible to students and have been selected especially for purposes of instruction in determinative and descriptive mineralogy; also collections of crystals, and of wooden and glass models for illustrating the science of crystallography. The depart-

ment is well equipped with goniometers, microscopes, polariscopes, and apparatus necessary for the physical and optical examination of crystals.

One room is fitted up as a laboratory for determinative mineralogy and as an analytical laboratory for the complete chemical investigation of mineral substances. The importance of careful chemical work in connection with the investigation of mineral substances cannot be overestimated, and analytical chemistry has always been insisted upon as a foundation for mineralogical work at Yale.

Very complete series of journals and works pertaining to minerology and crystallography are contained in the libraries of Professors Brush and Dana, and in the Yale University Library.

PETROLOGY

The work in this branch of Geology is carried on in a large well-lighted laboratory in Peabody Museum especially devoted to this purpose. In addition to the general exhibition collections, libraries, etc. of the museum which are accessible to students in this department, it contains the following material for purposes of instruction.

a. A study collection consisting of 1,500 specially selected specimens, largely from type localities.

b. The Educational Series prepared by the U. S. Geological Survey.

c. A large number of local collections illustrating the petrology of various regions, both in this country and abroad, which have been studied and described.

d. A number of local collections and material not yet studied and available for investigation and description.

These specimens, numbering many thousands, are arranged in cases in drawers which make them readily accessible for study and reference, and thin sections have been prepared from nearly all of them.

For microscopical and optical work the laboratory is well supplied with collections of prepared sections and microscopes, the latter being of the latest patterns by Fuess of Berlin.

The laboratory also contains a special library consisting of several thousand catalogued books and pamphlets affording practically the complete literature of the subject.

For chemical and special mineralogical work in connection with rocks, the apparatus and laboratories of the mineralogical department are available. For the preparation of thin sections a room with suitable apparatus of the latest patterns is provided in the basement.

PALEONTOLOGY

The Paleontological Section of the Peabody Museum contains collections representing the departments of fossil vertebrates, invertebrates, and plants. The exhibition series of fossil vertebrates occupies one of the large halls in the Museum building. Some of the remarkable types described by the late Professor O. C. Marsh are here displayed. The bulk of the vertebrate collections, however, are stored in rooms not open to the general public, but are accessible to special students.

The invertebrate exhibition hall contains collections representing the different orders of invertebrate animals, and is especially rich in series showing the stages of development and structural details. In the storage rooms are collections from many parts of the world. These may be used by students in Paleontology in investigating special problems and for general work.

In paleobotany, the museum possesses extensive collections of fossil Cycads and Carboniferous plants.

A department library devoted to Geology and Paleontology occupies a separate room, and contains most of the important works as well as the periodical literature relating to these sciences.

ZOOLOGY

The Zoological Department includes several distinct collections, besides the general systematic collection. In the latter, all departments of the animal kingdom are well represented, although only a part can be put on exhibition, for lack of room.

The principal special collections are as follows :

1. A very extensive and complete collection of the deep-sea fauna of the Atlantic ocean, mostly obtained by the deep-sea explorations made by the United States Fish Commission, from 1880 to 1887, while Professor Verrill had charge of those investigations. This includes a large number of types of new genera and species.

2. A remarkably complete series of the marine fauna of the New England coast and adjacent waters, including large numbers of described types of genera and species. This was also mostly collected by Professor Verrill, from 1864 to 1895, partly in connection with the work of the U. S. Fish Commission, and partly by independent explorations, with parties of his students.

3. A nearly complete collection of the Mammals, Birds, Reptiles and Fishes of New England, with a good series of the eggs and nests of the birds. In this collection is included the series of New England birds obtained and mounted by the late Professor W. D. Whitney.

4. A nearly exhaustive collection of the marine and terrestrial animals of the Bermudas, mostly collected by Professor Verrill and parties of his students in 1898 and 1901. This collection contains large numbers of types of new species recently described and figured by Professor Verrill and others. The collection of corals is particularly large and complete, and many of them have been figured in the Transactions of the Connecticut Academy, Vol. XI.

5. A very extensive collection of the marine fauna of Panama and the Gulf of California. This includes nearly all the types of the corals and echinoderms, etc., described from that coast by Professor Verrill many years ago.

6. A very valuable collection of corals from the East Indies, Pacific Ocean, and Brazil, including large numbers of the original types of corals described and figured in the great work of Professor J. D. Dana, on the Zoöphytes of the U. S. Exploring Expedition under Wilkes, and also numerous types of corals since described and figured by Professor Verrill, from the same regions.

7. A very valuable series of the more brilliant and rarer birds of New Guinea and Australia, presented by the late Mr. D. A. Heald, as a memorial of his son, Mr. C. A. Heald, who died while a student in the University.

OSTEOLOGY

The collection of recent Osteology in the Peabody Museum is in many respects the most complete collection in this country for purposes of study. Efforts have been made to secure the skeletons of rare existing vertebrates from every part of the world, particularly of Mammals, Birds, and Reptiles. The mammalian series is large and is especially valuable for the number and variety of the skeletons of Primates which it contains.

A part of the collection, consisting mainly of mounted skeletons, is placed on exhibition in one of the large rooms on the third floor; but the greater number of specimens, including the unmounted skeletons, are contained in the store-rooms and laboratories, where they are accessible for study and investigation.

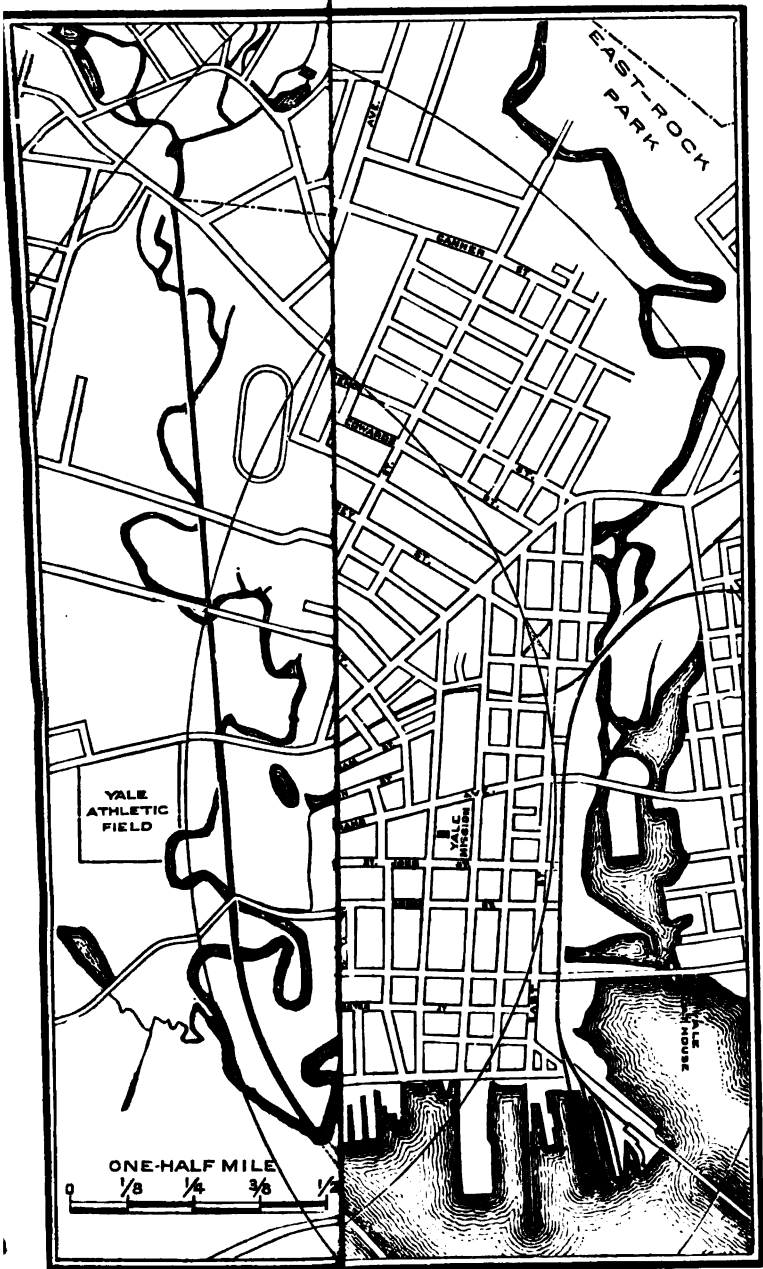
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GRADUATE SCHOOL

OF

YALE UNIVERSITY

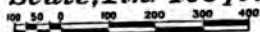


1903-1904



UNIVERSITY BUILDINGS.

Scale, 1 in. = 400 ft.



ABBREVIATIONS



- | | |
|------------------------------------|--|
| A. ART SCHOOL | O. H. OSBORN HALL |
| A. H. ALUMNI HALL | P. PIERSON HALL |
| B. SHEFFIELD BIOLOGICAL LABORATORY | P. H. PHELPS HALL |
| B. C. BATTALL CHAPEL | P. O. YALE STATION U. S. F. O. |
| B. H. BERKELEY HALL | S. H. SHEFFIELD HALL |
| B. M. H. BYERS MEMORIAL HALL | S. C. L. SHEFFIELD CHEMICAL LABORATORY |
| C. D. CARPENTRY DEPT | S. M. SOUTH MIDDLE COLLEGE |
| C. S. H. COLLEGE STREET HALL | U. H. UNIVERSITY HALL |
| D. DURFEE HALL | V. VANDERBILT HALL |
| D. H. DWIGHT HALL | W. WELCH HALL |
| F. FARNAM HALL | W. H. WHITE HALL |
| F. H. FAYERWEATHER HALL | WINCH. WINCHESTER HALL |
| H. H. HERRICK HALL | WOOD. WOODBRIDGE HALL |
| L. LIBRARY | |
| L. H. LAWRENCE HALL | |
| M. H. MEMORIAL HALL | |
| N. S. H. NORTH SHEFFIELD HALL | |

STREET

ASJUM

185 ELM STREET

STREET

H. BH.

F. H.

UNIVERSITY AVENUE

126 COLLEGE STREET

DIVINITY SCHOOL

STREET

"YORK HALL" S. S. S.

LAW SCHOOL

GRADUATES CLUB

STREET

STREET

STREET

HOPKINS GRAMMAR SCHOOL

BICENTENNIAL BUILDINGS

UNIVERSITY U. H. CAMPUS

WOOD.

M. H.

WOOLSEY HALL

"ST. ANTHONY" S. S. S.

G. M. H.

HISTORICAL SOCIETY

GROVE

PROSPECT-STREET

HILLHOUSE AVENUE

"CLOISTER" S. S. S.

"COLONY" S. S. S.

"ST. ELMO" S. S. S.

WHITNEY AVENUE

N. H. & N. R. R.

GRADUATE SCHOOL
OF
YALE UNIVERSITY

COURSES OF INSTRUCTION

FOR

1903-1904



NEW HAVEN:

1903

CALENDAR

1903

- 24 Sept. Thursday FIRST TERM begins.
25 Nov. Wednesday THANKSGIVING RECESS begins, 1.20 P. M.
27 Nov. Friday RECESS ends, 8 A. M.
16 Dec. Wednesday FIRST TERM ends.

Winter Vacation

1904

- 6 Jan. Wednesday SECOND TERM begins.
30 March Wednesday SPRING RECESS begins, 1.20 P. M.
14 April Thursday RECESS ends, 8 A. M.
26 June Sunday Baccalaureate Sermon.
29 June Wednesday COMMENCEMENT.

Summer Vacation

- 29 Sept. Thursday FIRST TERM begins.
21 Dec. Wednesday FIRST TERM ends.
-

For information with regard to the Graduate School, not contained in this pamphlet, and also with regard to Fellowships and Scholarships (see page 13), address the Dean,

Professor ANDREW W. PHILLIPS.

GRADUATE SCHOOL

FACULTY

ARTHUR TWINING HADLEY, LL.D., PRESIDENT

ANDREW WHEELER PHILLIPS, PH.D., *Dean, and Professor of Mathematics*

WILLIAM HENRY BREWER, PH.D., *Professor of Agriculture*

ARTHUR MARTIN WHEELER, LL.D., *Professor of History*

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JOHN HENRY NIEMEYER, M.A., *Professor of Drawing*

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WILLIAM GRAHAM SUMNER, LL.D., *Professor of Political and Social Science*

Rev. GEORGE TRUMBULL LADD, D.D., LL.D., *Professor of Philosophy*

CHARLES HENRY SMITH, LL.D., *Professor of American History*

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HENRY PARKS WRIGHT, PH.D., LL.D., *Professor of Latin*

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CHARLES SHELDON HASTINGS, PH.D., *Professor of Physics*
FRANK AUSTIN GOOCH, PH.D., *Professor of Chemistry*
ALBERT STANBURROUGH COOK, PH.D., L.H.D., *Professor of English*
WILLIAM BEEBE, M.A., *Professor of Mathematics and Instructor in Astronomy*
GEORGE BURTON ADAMS, PH.D., *Professor of History*
SAMUEL SIMONS SANFORD, M.A., *Professor of Applied Music*
HENRY WALCOTT FARNAM, R.P.D., *Professor of Political Economy*
EDWARD PARMELEE MORRIS, M.A., *Professor of Latin*
HENRY ROSEMAN LANG, PH.D., *Professor of Romance Philology*
RUSSELL HENRY CHITTENDEN, PH.D., *Professor of Physiological Chemistry*
JOHN HAYS HAMMOND, M.A., *Professor of Mining Engineering*
SAMUEL LEWIS PENFIELD, M.A., *Professor of Mineralogy*
HORACE LEMUEL WELLS, M.A., *Professor of Analytical Chemistry and Metallurgy*
THOMAS DWIGHT GOODELL, PH.D., *Professor of Greek*
CHARLES EMERSON BEECHER, PH.D., *Professor of Paleontology*
EDWARD WASHBURN HOPKINS, PH.D., LL.D., *Professor of Sanskrit and Comparative Philology*
ARTHUR HUBBELL PALMER, M.A., *Professor of German*
HORATIO MCLEOD REYNOLDS, M.A., *Professor of Greek*
FREDERICK MORRIS WARREN, PH.D., L.H.D., *Street Professor of Modern Languages*
GEORGE MARTIN DUNCAN, LL.D., *Professor of Philosophy*
E. HERSHEY SNEATH, PH.D., *Professor of Philosophy*
Rev. FRANK KNIGHT SANDERS, PH.D., D.D., *Professor of Biblical History and Archaeology*
LOUIS VALENTINE PIRSSON, M.A., *Professor of Physical Geology*
EDWARD GAYLORD BOURNE, PH.D., *Professor of History*
GUSTAV GRUENER, PH.D., *Professor of German*
CHARLES CUTLER TORREY, PH.D., D.D., *Professor of Semitic Languages*
HORATIO WILLIAM PARKER, MUS.D., *Professor of Music*
WILBUR LUCIUS CROSS, PH.D., *Professor of English*
JOHN CHRISTOPHER SCHWAB, PH.D., *Professor of Political Economy*
CHARLTON MINER LEWIS, PH.D., *Professor of English*

WILLIAM LYON PHELPS, PH.D., *Professor of English Literature*
ROBERT NELSON CORWIN, PH.D., *Professor of German*
IRVING FISHER, PH.D., *Professor of Political Economy*
JAMES PIERPONT, PH.D., *Professor of Mathematics*
HANNS OERTEL, PH.D., *Professor of Linguistics and Comparative Philology*
PERCEY FRANKLYN SMITH, PH.D., *Professor of Mathematics*
CHARLES FOSTER KENT, PH.D., *Professor of Biblical Literature*
HENRY SOLON GRAVES, M.A., *Professor of Forestry*
HENRY CROSBY EMERY, PH.D., *Professor of Political Economy*
GUY STEVENS CALLENDER, PH.D., *Professor of Political Economy*

OTHER INSTRUCTORS

JOHN CHESTER ADAMS, B.A., *Tutor in English*
WILLIAM GILBERT ANDERSON, M.D., *Director of the Gymnasium*
Rev. BENJAMIN WISNER BACON, LITT.D., D.D., *Professor of New Testament Greek*
WILLIAM BACON BAILEY, PH.D., *Instructor in Statistics and Sociology*
ERNEST HICKOK BALDWIN, PH.D., *Lecturer in History*
CECIL KITTREDGE BANCROFT, B.A., *Instructor in Latin*
SAMUEL EBEN BARNEY, C.E., *Assistant Professor of Civil Engineering*
JOSEPH BARRELL, PH.D., *Assistant Professor of Geology*
PAUL VICTOR CHRISTOPHER BAUR, PH.D., *Instructor in Classical Archaeology*
EDWARD AUGUSTUS BOWERS, B.A., *Lecturer in Forest Law*
PHILIP EMBURY BROWNING, PH.D., *Assistant Professor of Chemistry*
HENRY ANDREWS BUMSTEAD, PH.D., *Assistant Professor of Physics*
WILLIAM CHURCHILL, PH.D., *Tutor in Philosophy*
CHARLES UPSON CLARK, B.A., *Tutor in Latin*
CHARLES CAMERON CLARKE, JR., B.A., *Assistant Professor of French*
WESLEY ROSWELL COE, PH.D., *Assistant Professor of Comparative Anatomy*
WILLIAM JAMES COMSTOCK, PH.B., *Instructor in Organic Chemistry*
ALBERT EUGENE CURDY, PH.D., *Instructor in French*
Rev. EDWARD LEWIS CURTIS, PH.D., D.D., *Professor of Hebrew*
HENRY DAVIES, PH.D., *Lecturer on Aesthetics and Medieval Philosophy*
ARTHUR LYMAN DEAN, PH.D., *Assistant in Plant Physiology*

- GEORGE FRANCIS EATON, PH.D., *Instructor in Osteology*
ALEXANDER WILLIAM EVANS, M.D., PH.D., *Assistant Professor of Botany*
CLIVE DAY, PH.D., *Assistant Professor of Economic History*
WILLIAM OLIVER FARNSWORTH, M.A., *Instructor in French*
HOLLON AUGUSTINE FARR, M.A., *Tutor in German*
HARRY BURR FERRIS, M.D., *Hunt Professor of Anatomy*
HARRY WARD FOOTE, PH.D., *Instructor in Physical Chemistry*
WILLIAM EBENEZER FORD, JR., PH.B., *Assistant in Mineralogy*
ARTHUR SULLIVAN GALE, PH.D., *Instructor in Mathematics*
CLYDE CHEW GLASCOCK, PH.D., *Instructor in German*
WILLIAM ANTHONY GRANVILLE, PH.D., *Instructor in Mathematics*
HERBERT ERNEST GREGORY, PH.D., *Assistant Professor of Physiography*
HERBERT EDWIN HAWKES, PH.D., *Instructor in Mathematics*
EARLE RAYMOND HEDRICK, PH.D., *Instructor in Mathematics*
WILLIAM MILTON HESS, PH.D., *Lecturer in Philosophy*
JAMES W. D. INGERSOLL, PH.D., *Assistant Professor of Latin*
HARRY BENJAMIN JEPSON, B.A., MUS.B., *Assistant Professor of the Theory of Music, and Instructor in Organ-Playing.*
CHARLES HUBBARD JUDD, PH.D., *Instructor in Psychology*
ALBERT GALLOWAY KELLER, PH.D., *Assistant Professor of the Science of Society*
ANDREW KEOGH, *Lecturer on Bibliography*
HENRY STANLEY KNIGHT, *Instructor in Piano-Forte Playing*
HENRY BARRETT LEARNED, M.A., *Instructor in History*
Rev. FREDERICK LENT, M.A., *Instructor in Biblical Literature*
FREDERICK BLISS LUQUIENS, B.A., *Instructor in French and Spanish*
GEORGE GRANT MACCURDY, M.A., *Lecturer in Anthropology*
CLOYD NORTH MCALLISTER, PH.D., *Lecturer on Experimental Pedagogy, and Assistant in the Psychological Laboratory*
KENNETH MCKENZIE, PH.D., *Instructor in Romance Languages*
LAFAYETTE BENEDICT MENDEL, PH.D., *Assistant Professor of Physiological Chemistry*
GEORGE REDINGTON MONTGOMERY, PH.D., *Lecturer in Philosophy*
JOHN PEASE NORTON, PH.D., *Instructor in Political Economy*
CHARLES GROSVENOR OSGOOD, PH.D., *Tutor in English*
WILLIAM MELVILLE PATTON, PH.D., *Instructor in Biblical Literature*

ISAAC KING PHELPS, PH.D., *Instructor in Chemistry*

REV. FRANK CHAMBERLIN PORTER, PH.D., D.D., *Professor of Biblical Theology*

EDWARD BLISS REED, PH.D., *Assistant Professor of English*

LEO FREDERICK RETTGER, PH.D., *Instructor in Bacteriology*

OLIVER HUNTINGTON RICHARDSON, PH.D., *Assistant Professor of History*

CHALFANT ROBINSON, PH.D., *Lecturer on Commercial Treaties of the United States*

HENRY HOLLISTER ROBINSON, PH.B., *Instructor in Geology*

ROBERT KILBURN ROOT, PH.D., *Tutor in English*

STUART HENRY ROWE, PH.D., *Lecturer on Pedagogy*

ROBERT LOUIS SANDERSON, M.A., *Assistant Professor of French*

RUDOLPH SCHWILL, PH.D., *Instructor in Spanish*

EDWARD WHEELER SCRIPTURE, PH.D., *Assistant Professor of Experimental Psychology, and Director of the Psychological Laboratory*

JAY WEBBER SEAYER, M.D., *Associate Director of the Gymnasium*

DAVID STANLEY SMITH, B.A., *Instructor in the Theory of Music*

THOMAS CALHOUN STEARNS, PH.D., *Lecturer in Ancient Philosophy*

GEORGE BARKER STEVENS, PH.D., LL.D., *Professor of Systematic Theology*

LEONARD MERRILL TARR, M.A., *Lecturer on Meteorology*

WILLIAM JAMES TAYLOR, PH.D., *Lecturer on the History of Education*

JAMES WILLIAM TOUMEY, M.S., *Assistant Professor of Forestry*

HON. WILLIAM KNEELAND TOWNSEND, D.C.L., *Professor of Contracts, Patents, and Admiralty Jurisprudence*

ISIDOR TROOSTWYK, *Assistant Professor of Applied Music, and Instructor in Violin-Playing*

CHARLES PHILIP WAGNER, PH.D., *Instructor in Spanish*

WILLISTON WALKER, PH.D., D.D., *Professor of Ecclesiastical History*

CHARLES HEALD WELLER, B.A., *Lecturer on Greek Literature*

PHILIP PATTERSON WELLS, PH.D., *Lecturer in History*

HENRY LORD WHEELER, PH.D., *Assistant Professor of Organic Chemistry*

FREDERICK WELLS WILLIAMS, B.A., *Assistant Professor of Modern Oriental History*

EDWIN BIDWELL WILSON, PH.D., *Instructor in Mathematics*

ANDREW LINCOLN WINTON, PH.B., *Instructor in Proximate Organic Elements*

ADMINISTRATIVE COMMITTEE,

WITH CONSULTATION HOURS

ARTHUR TWINING HADLEY, LL.D., PRESIDENT,

Woodbridge Hall, daily, 8.30 A. M. to 1 P. M.

ANDREW WHEELER PHILLIPS, PH.D., DEAN, and *Professor of Mathematics*, 90 High street, daily, except Saturday, 10.30 A. M. to 12 M.

ARTHUR MARTIN WHEELER, LL.D., *Professor of History*,

C, Osborn Hall, Monday, Tuesday, Thursday, and Friday,
11 A. M.

CHARLES BRINCKERHOFF RICHARDS, M.A., *Professor of Mechanical Engineering*, 112 Winchester Hall, Tuesday and Friday,
10.30 to 11 A. M.

Rev. GEORGE TRUMBULL LADD, D.D., LL.D., *Professor of Philosophy*,
275 Lawrance Hall, Monday and Thursday, 12 M.

THOMAS DAY SEYMOUR, LL.D., *Professor of Greek*,
22 Phelps Hall, daily, 11 A. M. to 12 M.

ALBERT STANBURROUGH COOK, PH.D., L.H.D., *Professor of English*,
219 Bishop street, Monday and Thursday, 1.30 P. M.

HENRY WALCOTT FARNAM, R.P.D., *Professor of Political Economy*,
43 Hillhouse av., daily, except Saturday, 2 to 3 P. M.

RUSSELL HENRY CHITTENDEN, PH.D., *Professor of Physiological Chemistry, and Director of the Sheffield Scientific School*, 3 Sheffield Hall,
daily, except Friday, 10 A. M. to 12 M.

Rev. FRANK KNIGHT SANDERS, PH.D., D.D., *Professor of Biblical History and Archaeology, and Dean of the Divinity School*, 615 East Divinity Hall, daily, 10 A. M. to 12.30 P. M.

GENERAL STATEMENT

ORGANIZATION

The Graduate School of Yale University is a section of the Department of Philosophy and the Arts, which was first formally organized in 1847 for scientific and graduate instruction, but now includes Yale College, the Sheffield Scientific School, the School of the Fine Arts, the Department of Music, and the Forest School.

The degrees of Doctor of Philosophy and Civil Engineer were first offered in 1860, the degree of Dynamical or Mechanical Engineer in 1873, that of Master of Arts (previously given without evidence of study) in 1874, and that of Master of Science in 1897.

The professors in the several sections of the Department of Philosophy and the Arts together constitute the Faculty of the Graduate School. The general oversight of graduate instruction and graduate students is entrusted to the Dean and the Administrative Committee, who may be called upon for information and advice. Students are expected to report to the Dean soon after reaching New Haven.

ADMISSION AND REGISTRATION

Graduates of this and other Colleges and Universities, and (in exceptional cases, by special permission) other persons of liberal education, who are at least eighteen years' old, are received as students for longer or shorter periods, with or without reference to the attainment of a degree.

All graduate students who are not regularly enrolled in any other department of the University are required to register their names at the office of the Dean at the beginning of each year of study.

The degree of Doctor of Philosophy, with the courses of the Graduate School leading thereto, is open to candidates without distinction of sex.

FEES AND EXPENSES

The fee for instruction is generally one hundred dollars per year; but it may be more, or less, according to the courses pursued and the amount of instruction received.

A special fee of five dollars is charged to those who use the Gymnasium, and one of two dollars to those admitted to the use of the College Reading-room.

Board is obtained at prices varying from three and a half to eight dollars a week. The average price is under five dollars.

A list of suitable rooms is kept at the Dean's office.

INSTRUCTION

Courses of study are offered in the following departments:

- I. PSYCHOLOGY, ETHICS, AND PHILOSOPHY.
- II. ECONOMICS, SOCIAL SCIENCES, HISTORY, AND LAW.
- III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.
- IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY.
- V. MODERN LANGUAGES AND LITERATURES.
- VI. NATURAL AND PHYSICAL SCIENCE.
- VII. MATHEMATICS.
- VIII. THE FINE ARTS.
- IX. MUSIC.
- X. PHYSICAL EDUCATION.

Instruction is given partly by lectures, partly in recitations and by oral and written discussions, partly by directing courses of reading, and partly by the direction of work in the laboratories and with instruments.

The attention of teachers who desire to fit themselves more thoroughly for a higher grade of professional work is called to the advantages offered by this department for pedagogical instruction and discipline. In addition to the special and advanced study of the subjects in which the

graduate student desires instruction, and the pursuit of courses in psychology, ethics, philosophy, and of other courses cognate with pedagogy, opportunity is afforded to observe the actual practice in the class-room, as well as the organization of the different departments of the University and their methods of work.

DEGREES

The DEGREE OF DOCTOR OF PHILOSOPHY is conferred upon those students who show the results of resident graduate work by a thesis giving evidence of high attainment and power of investigation, and by an examination on studies whose grade and amount meet the approval of the Faculty. Under ordinary circumstances two or more years' work in residence will be required, but in exceptional cases work of equal grade at another University may take the place of a year's residence here. The thesis must be deposited at the Library for public inspection, not later than May 1. A good knowledge of Latin, German, and French is required in all cases, unless, for some very exceptional reasons, the candidate be excused by the Faculty. Evidence of sufficient attainments in these languages must be furnished the Dean at least two years before the degree is given. The fee for instruction is one hundred dollars per year. The fee for graduation is ten dollars.

The DEGREE OF MASTER OF ARTS is conferred on Bachelors of Arts of Yale College (and on Bachelors of Arts of other colleges whose course of study is equivalent to that of Yale College), who have given to the College Faculty evidence of satisfactory progress in liberal studies after receiving their first degree. Such evidence may be furnished by one year's systematic study (not professional) in New Haven, under the direction of the College Faculty, followed by an examination. Grad-

uates of other colleges can obtain the degree only by residence as thus described. The charge for instruction is usually one hundred dollars per year, with a fee of ten dollars for the degree.

Such Bachelors of Arts of *Yale College* as may not choose to reside at the College for study may, at any time not less than three years after graduation, show, in either of the two following ways, that they have spent a year in liberal (and non-professional) study, and are worthy of recommendation for this degree. (1) Such candidates may apply to the Faculty for the designation of a course of study, on which an examination shall be taken. This application must be accompanied by a fee of twenty-five dollars. (2) Or a candidate may submit as evidence of his fitness for this degree a printed essay, for the examination of which a fee of twenty-five dollars (to be paid in advance) is required. An additional fee of ten dollars will be charged in all cases for the degree.

A committee of the Faculty is appointed (consisting for the present year of Professors Wheeler and Phillips), to whom candidates for this degree must submit their proposed courses of study for approval by the end of October in each year; and the evidence of a year's study must be submitted to the same committee by June 1.

The DEGREE OF MASTER OF SCIENCE is conferred on graduates of this or other universities, of two years' standing or upwards, who have taken their first degree in science and who pursue successfully a higher course of study in science under the direction of the Governing Board of the Sheffield Scientific School. Such a course involves at least one year of resident graduate study, followed by an examination and presentation of a satisfactory thesis in some department of science. A committee of the Faculty is appointed, to whom candidates for this degree must submit their proposed courses of study for approval before the end of October of each year.

The DEGREES OF CIVIL ENGINEER AND OF MECHANICAL ENGINEER are conferred on Bachelors of Philosophy who have taken the first degree in Engineering study, and who pursue a higher course under the direction of the Governing Board of the Sheffield Scientific School for at least two years, sustaining a final examination, and giving evidence of their ability to design important constructions and to make the requisite drawings and calculations. The fee for graduation is five dollars.

FELLOWSHIPS

FIVE FELLOWSHIPS yielding four hundred dollars each, not exempting the holders from charges for tuition, are open to graduates of all colleges; but preference is given to those who have already spent at least one year in graduate study, and have shown capacity for original work.

The BULKLEY FELLOWSHIP IN AMERICAN HISTORY was established in 1901 by the gift of ten thousand dollars from Mr. Jonathan Bulkley, of the class of 1879, and other members of his family, in memory of Helena Perry Bulkley. The income, four hundred dollars, is awarded annually to a student of high character and marked ability, who will pursue graduate studies in American History or Administration under the direction of the Professors of History.

The HENRY C. ROBINSON FELLOWSHIP was founded in 1900 in the name of Mrs. Mary Robinson Cheney, of Hartford, Conn., and her sister, Miss Eliza Robinson, in memory of their uncle, Henry C. Robinson, of the class of 1853, by the gift of five thousand dollars. The income is awarded annually to a student of the Graduate School, selected on the ground of ability and attainments.

The JOHN ADDISON PORTER MEMORIAL FELLOWSHIP was established in 1901 by Mrs. Josephine S. Porter, in memory of her husband, Professor John Addison Porter, of the

class of 1842, and of her son, John Addison Porter, of the class of 1878, by the gift of ten thousand dollars. The income is awarded annually to a graduate of the Academical Department or of the Sheffield Scientific School, selected for distinguished excellence and promise in the Department of English.

The CLASS OF '90 FELLOWSHIP, yielding one hundred and fifty dollars, is awarded to a student who has shown ability to do research-work.

The LOOMIS FELLOWSHIP in Physics was established in 1902, by Professor Francis E. Loomis, class of 1864, Yale College, by the gift of ten thousand dollars. This Fellowship is open to the graduates of the Scientific and Academical Departments of Yale University, and to graduates of other Universities who have spent at least one year in the study of Physics, in the Graduate School of Yale. It is granted to the candidate who passes the best competitive examination in Physics (descriptive, mathematical, and laboratory practice). The holder of this fellowship must be a candidate for the degree of Doctor of Philosophy, and must make Physics his chief study.

The YALE ALUMNI ASSOCIATION OF CALIFORNIA FELLOWSHIP of three hundred dollars is given to a graduate of one of the California Universities, pursuing studies at Yale in the Graduate School. The incumbent is selected by the Association.

The following Fellowships are, by the terms of the donations, open only to graduates of Yale College :

The DOUGLAS FELLOWSHIP.

The SOLDIERS' MEMORIAL FELLOWSHIP.

The SILLIMAN FELLOWSHIP.

The JOHN SLOANE FELLOWSHIP.

The SCOTT HURTT FELLOWSHIP.

The ELLEN BATTALL ELDRIDGE FELLOWSHIPS (two).

The MACY FELLOWSHIP.

The LARNED FELLOWSHIPS (three).
The FOOTE FELLOWSHIPS (three).
The CUYLER FELLOWSHIP.

SCHOLARSHIPS

TWENTY SCHOLARSHIPS, yielding one hundred dollars each, are open to graduates of all colleges.

The following Scholarships are open only to graduates of Yale College :

The CLARK SCHOLARSHIPS, and
The W. W. DE FOREST SCHOLARSHIP.

The DANIEL C. EATON GRADUATE SCHOLARSHIP IN BOTANY is endowed with the income of a fund of two thousand dollars given by Mrs. Eaton in commemoration of her husband, the late Professor Daniel C. Eaton. This scholarship will be open for competition to members of the Senior classes in the Academical and Scientific departments, on conditions to be prescribed by the Governing Board of the Sheffield Scientific School.

SIX SHEFFIELD SCHOLARSHIPS of \$100 each (covering the charges for tuition) are awarded, on application, to those members of the graduating class of the Sheffield Scientific School who have attained high proficiency in the special studies of their respective courses, and who desire to spend one or more years in graduate study in the School. Each scholarship will be available for one year only. Application for these scholarships must be made in writing on or before June 1st to the head of the department to which the student belongs, with a statement as to the character of the graduate study to be pursued.

Candidates for appointment to Fellowships and Scholarships should send their applications, accompanied by letters of recommendation and other evidence of the excellence of their work already accomplished, to the Dean, Professor Andrew W. Phillips, not later than April 15.

The ARTHUR TWINING HADLEY SCHOLARSHIP yields an income of \$225 a year, which sum is awarded annually to one or more students of the University, to assist in the publication of meritorious theses or other results of investigation.

The sum of fifty dollars is appropriated by the University towards defraying the cost of publication of each thesis submitted for the degree of Doctor of Philosophy, which is recommended for such purpose by the expert readers of the thesis in question, provided such thesis is actually published, in separate form, by the first day of January following the graduation of the candidate, and that fifty copies have been presented to the University.

PRIZES

The JOHN A. PORTER PRIZE, of the value of two hundred and fifty dollars, established by the Kingsley Trust Association in 1872, is offered for the best English Essay on a prescribed subject. Competing essays must be handed in after the close of the Spring recess, and the award will be announced on Commencement Day. Any person who has been pursuing a regular course for a degree in any Department during the whole of the current College year, may compete for this prize. If none of the competing essays is of sufficient merit, the prize will not be awarded.

The subjects for Essays in 1903 are as follows :—

1. Industrial War.
2. The Australian Plan of what is commonly called Compulsory Arbitration.
3. The Rights of the Filipino under the Constitution of the United States.
4. The Romans and the Anglo-Saxons, a Parallel or a Contrast.
5. Eleanor of Aquitaine, Queen of France and of England.

6. Recent Developments in the Law of Unfair Competition in Trade.
 7. Can Prices be Manipulated by Anybody?
 8. Independent Labor Movements in American Politics.
 9. President Cleveland and the Democratic Party.
 10. The Power of Ritual for the Conservation and Propagation of Doctrine.
 11. Christianity and Democracy.
 12. The Influence of Horace Bushnell upon American Thought and Life.
 13. Ritschl and his School.
 14. The Effects of Modern Historical Criticism on the Literary and Devotional Use of the Bible.
 15. The Nature of the Authority of Christ as a Teacher of Social Ethics.
 16. Sidney Lanier.
 17. Present Tendencies in French Literature.
 18. Present Tendencies in American Literature.
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The **COOK PRIZE IN POETRY**, of the value of fifty dollars, is offered by Professor Cook for the best unpublished poem. Competition is open to students of the University in all departments. If none of the competing poems is of sufficient merit, the prize will not be awarded. Before receiving the prize, the winner must print the successful poem in a manner acceptable to the donor. The poems, each of which should be signed by an assumed name, and accompanied by a sealed envelope containing the writer's full name, will be due on April 1, and may be handed in at the Chittenden Library.

The **JACOB COOPER PRIZE IN GREEK PHILOSOPHY**, established in 1900 by the gift of five hundred dollars from Professor Albert S. Cook, is awarded in any year by the departments of Greek and Philosophy to such student of the University, being a person of high attainments and ability, as shall pass the best examination in the *Metaphysics* and *Organon* of Aristotle and shall submit the best thesis upon some topic drawn from one of these works and announced publicly at a convenient time in advance.

The **GEORGE WASHINGTON EGGLESTON HISTORICAL PRIZE**, the income of one thousand dollars, founded by George Washington Egleston, Esq., of Eardisley, Herefordshire, England, will be awarded to any student of the University who shall during the ensuing year, by research, discover any new fact or facts relating to American History ; or shall from existing data bring to bear any information, or criticism, sufficiently notable to be useful from a literary point of view.

COURSES OF INSTRUCTION

Courses marked with an asterisk (*) are undergraduate courses ; they are open to graduate students who have the consent of the instructor and the approval of the Faculty.

The number of hours stated means, when not otherwise specified, hours of exercise, lectures, or recitations, each week through the year.

For **UNIVERSITY PRIVILEGES**, including information respecting **RESEARCH CLUBS, LIBRARIES, LECTURES, CONCERTS**, etc., see pages 137-143.

COURSES OF INSTRUCTION

I. PHILOSOPHY

GEORGE T. LADD, D.D., LL.D.	GEORGE B. STEVENS, D.D., LL.D.
E. WASHBURN HOPKINS, LL.D.	GEORGE M. DUNCAN, LL.D.
E. HERSHEY SNEATH, Ph.D.	EDWARD W. SCRIPTURE, Ph.D.
CHARLES H. JUDD, Ph.D.	CLOYD N. McALLISTER, Ph.D.
WILLIAM CHURCHILL, Ph.D.	STUART H. ROWE, Ph.D.
HENRY DAVIES, Ph.D.	THOMAS C. STEARNS, Ph.D.
GEORGE R. MONTGOMERY, Ph.D.	WILLIAM M. HESS, Ph.D.
WILLIAM J. TAYLOR, Ph.D.	

COURSES IN THIS DEPARTMENT are offered in Introduction to Philosophy, Psychology, Logic and Epistemology, Ethics, Aesthetics, Metaphysics, Philosophy of Religion, Pedagogics, History of Philosophy, and Philosophical Criticism.

For COGNATE COURSES, of especial value to students in this Department, in Physiology, Histology and Biology, see course VI, 63 f.; in Anthropology and Social Science, see course II, 1 f.; in Evolution, see courses II, 34, and VI, 57, 61; in Chemical Theory, see course VI, 28; in Plato, see course IV, 4, 17 and 20a.

The UNDERGRADUATE CLASSES in Psychology, Logic, and Ethics may be freely attended by graduate students in order to study the methods of instruction in these subjects employed in Yale College.

The PHILOSOPHICAL SEMINARY ROOM, 4 Herrick Hall, is fitted up for the use of graduate students in Philosophy. It contains the Departmental Library, and may be utilized for purposes of study at all times. Keys are furnished on application to Professor Ladd to all graduate students taking courses in the department.

The HEALY PHILOSOPHICAL LIBRARY, founded by a gift of \$10,000 from Mrs. Susie Healy Camp, of Hartford, as a memorial of her father, William Arnold Healy, is a depart-

mental library for the Department of Philosophy. It is placed in the Philosophical Seminary room, and consists of 1,500 volumes, to which additions are constantly being made, besides the current philosophical and psychological periodicals. It aims to afford all the advantages of a well-selected consulting library for the students of philosophy.

The PSYCHOLOGICAL LABORATORY of the Department is thoroughly equipped for both instruction and original research. In addition to the provisions for work in experimental psychology, there are sections for work in experimental pedagogy. Each student pursuing investigations is assigned a desk and an allotment of space and apparatus. An annual publication, the *Studies from the Yale Psychological Laboratory*, the tenth volume of which has recently been issued, contains the results of all researches carried on in the laboratory.

The PHILOSOPHICAL CLUB, composed of the instructors in the Department and all graduate students who take courses in philosophy, holds regular meetings fortnightly, on Tuesday evening. It is designed to afford opportunity both for the presentation and discussion of the results of original research by its members, and also for hearing addresses and papers from distinguished authorities on philosophical subjects, who are not connected with the Department as teachers. Addresses have been delivered before the Club by Professors Lloyd Morgan, John Watson, W. T. Harris, J. G. Schurman, William James, J. McKeen Cattell, Josiah Royce, Borden P. Bowne, William Caldwell, John Dewey, J. Mark Baldwin, and others.

INTRODUCTION TO PHILOSOPHY

Professor DUNCAN :—

1 *Encyclopaedia of Philosophy.*

A series of informal lectures on the study of philosophy, and the literature of its various branches.

[Hours to be announced.]

Professor SNEATH :—

*2 *Introduction to Philosophy.* 2 hrs.

This course of lectures is designed to present, in an elementary way, the principal philosophical problems. It is a general introduction to the more special or advanced study of philosophy. The order of topics followed will be based upon some book giving a general treatment of the subject, supplemented by other reading.

[Monday and Wednesday, 9.30 A. M., A₁ O.]

PSYCHOLOGY

Professor LADD :—

[3 *Abnormal Psychology.* 1 hr.

This course of lectures discusses the phenomena of illusions and hallucinations, the physiological changes and mental states in sleep, and in hypnotic, somnambulistic, and other allied conditions. The theory of illusions and hallucinations is discussed in detail.

Omitted in 1903-1904.]

Professors LADD, DUNCAN and SNEATH :—

4 *Research Work in Analytical Psychology and the Philosophy of Mind.*

Consultations. Original investigations are undertaken under the direction of the instructors. Recently published examples of such researches are: *The Psychology of Expectation* [Psychological Review Monograph Supplement, No. 20], by Clara M. Hitchcock, Ph.D., Professor in Lake Erie College; *A Psychological Study of the Founder of Mormonism* [Dodd, Mead & Co., N. Y.], by I. Woodbridge Riley, Ph.D., Professor in the University of New Brunswick.

Professor DUNCAN :—

5 *Psychological Theory.* 2 hrs.

An advanced course in General Psychology, which aims at a detailed study of the principal phenomena of mental life from the modern scientific standpoint, with a view to the formation of an intelligent and comprehensive theory of the mind's nature and functions. In connection with the course James's *The Principles of Psychology* will be read and critically discussed. Papers, discussions and lectures.

[Monday, 8.30-10.00 A. M., B₁ O.]

Dr. JUDD :—

6 *Genetic Psychology.*

1 hr.

A course of lectures and readings dealing with the facts and principles of mental development. A comparative study will be made of mental development as exhibited in adult life and in the child. Animal consciousness, race consciousness, and the results of biological study of physical development, will be treated in so far as they throw light on the main problem. This course deals with those aspects of psychology most closely related to practical pedagogy.

[Saturday, 8.30 A. M., 2 H. H.]

Drs. JUDD and McALLISTER :—

7 *Experimental Psychology (Laboratory Course).*

3 hrs.

A course dealing with the methods and results of experimental investigation of mental phenomena. Two hours a week will be devoted to laboratory exercises. In this part of the course each member of the class will perform a series of typical experiments selected so as to familiarize the student with all the essential subjects belonging to experimental psychology. The third hour each week will be devoted to a critical discussion of the methods employed in the laboratory exercises, of the results obtained, and of the significance of each experiment for systematic psychology. This part of the course will consist of lectures, reports and general class discussions.

Tuesday, 4.00–6.00 P. M.; Thursday, 4.00 P. M., 1 H. H.]

Dr. JUDD :—

8 *Psychology (Experimental Problems).*

3 hrs.

This course is designed for advanced students who are preparing to undertake psychological investigations. It will consist of laboratory exercises and lectures. Three problems will be taken up in the course of the year, and will be made subjects of thorough investigation in the laboratory exercises. The problems for 1903–1904 are as follows: the effects of practice on the Zöllner illusion, binocular color-mixing, the perception of time in simple rhythms. The lectures will present a brief historical survey of certain lines of psychological investigation and will aim to indicate the directions in which new investigations are required.

[Hours to be arranged.]

Drs. JUDD, McALLISTER and CHURCHILL :—

9 *Experimental Psychology (Research)*. 4 hrs.

Graduate students who have taken courses in general and experimental psychology may make use of the facilities of the laboratory for carrying on original researches on such subjects as they may choose after consultation with the instructor in charge of the laboratory. All students engaged in researches are expected to exchange a limited amount of time with other investigators in the laboratory, in order to insure trained subjects for all of the researches. Meritorious original researches carried on in the laboratory are published in the *Studies from the Yale Psychological Laboratory*.

Dr. McALLISTER :—

10 *Psychology (Laboratory Equipment)*. 1 hr.

This course is designed for those who are preparing to teach psychology, and should become familiar with the selection and construction of apparatus, and the practical organization of a laboratory. Practical exercises in the construction of apparatus in wood and in metal will be given in the workshop. Typical lists of apparatus will be presented and methods of laboratory installation will be illustrated and discussed, with special reference to the needs of small laboratories. Especial attention will also be given to the selection of inexpensive apparatus and the performing of simple experiments, suitable for illustrative purposes in teaching the elements of psychology in normal schools, and in small colleges which do not possess a psychological laboratory.

[Friday, 4.00 P. M., H. H.]

Dr. MONTGOMERY :—

11 *Recent German Psychology in German*. 2 hrs.

The class will read as much of Ebbinghaus's *Psychologie* as possible, and also extracts from other recent German psychologists, Jodl, Wundt, Brentano, Münsterberg, Külpe, Stumpf, and others. The principal object of the course is to obtain a reading knowledge of the German psychologists; at the same time the attempt will be made to set forth in some detail through lectures and discussions the differences in their positions.

[Thursday, 10.30 A. M.—12.15 P. M., B₁ O.]

For other courses dealing with Psychology, see courses 12, 13, 16, 17–20, 23, 31, 34 and 48; also II, 5.

ETHICS

Professor LADD :—

- 12 *Philosophy of Conduct.* 2 hrs.

The principal topics of ethics will be discussed with a view to the formation of an intelligent and comprehensive theory of man's moral nature and development. Among these topics especial attention will be given to the following :—the origin and value of the feeling of moral obligation, the sources of ethical judgments, the nature and proofs of moral freedom, the classifications and character of the different forms of virtuous living, the unity of virtue, the validity and universality of moral law, the nature of the moral ideal, and the nature and ground of the morally Good, or the Right.

Special attention will be directed throughout to the self-discipline and ethical aspects of the teacher's work. The exercises will consist, in general, of a lecture, to be followed by a paper and discussion by the class.

[Monday, 7.45-9.15 P. M., 4 H. H.]

Professor SNEATH :—

- [13 *Systematic Ethics.* 2 hrs.

A study of the main problems of the philosophy of conduct—the nature of the moral self, the freedom of the will, the nature and grounds of moral relations, etc. Portions of the following works will be studied : Sidgwick's *Methods of Ethics*, Mill's *Utilitarianism*, Martineau's *Idiopsychological Ethics*, Paulsen's *A System of Ethics*, and Ladd's *The Philosophy of Conduct*.

Omitted in 1903-1904.]

- 14 *History of Modern Ethics.* 2 hrs.

This course traces the development of modern ethical thought from Hobbes to the present time. The course will deal primarily with British ethics. However, German ethical thought from Kant to Schopenhauer will be carefully considered. Lectures and elaborate papers.

[Tuesday, 2.30-4.00 P. M., A, O.]

- 15 *Modern Political Philosophy.* 1 hr.

A study of the development of reflective thought in modern philosophy on the questions of the origin, nature, functions, forms, and ends of civil government. The work of the course

consists of a series of lectures, with collateral readings, on the following authors : Hobbes, Spinoza, Locke, Rousseau, Burke, Bentham, Mill, Hegel, etc.

[Monday, 3 P. M., A. O.]

[16 *Ethical Seminary.* 2 hrs.

Research work along specific ethical lines will constitute the work of the seminary. For the year 1904-1905 the subject will be the doctrine of the freedom of the will in pre-Kantian modern philosophy.

Omitted in 1903-1904.]

For other courses dealing with Ethics, see courses 42 and 48.

LOGIC AND EPISTEMOLOGY

Professor DUNCAN :—

17 *The Principles of Logic.* 1 hr., 1st half-year.

A course treating of the more important problems connected with the nature and forms of reasoning and the conditions of proof. This course should be followed by course 18.

[Hours to be arranged.]

Dr. JUDD :—

18 *Scientific Method.* 1 hr., 2d half-year.

A course in the methods of the sciences with especial reference to the assumptions and criteria of inductive reasoning.

[Hours to be arranged.]

Professor DUNCAN :—

[19 *Epistemology.* 2 hrs.

The nature and conditions of formal truth will be studied in connection with the reading of an advanced work on logic, such as Hobhouse's *Theory of Knowledge*. This will be followed by a study of the psychology of knowledge and by an examination of the nature, limits, and grounds for the validity of our knowledge of reality. Professor Ladd's *Philosophy of Knowledge* will be read in connection with the latter part of the course.

Omitted in 1903-1904.]

20 *Philosophical Scepticism.*

2 hrs.

An historical and critical examination of scepticism as revealed in the history of speculative thought, with especial reference to the determination of the causes, grounds, and limits of scepticism, and the construction of a valid theory of knowledge. The course will include a study of the scepticism of the Sophists ; the Earlier and Later Pyrrhonists ; the Middle and New Academies ; the scepticism of Augustine and Descartes ; of Hume and Kant ; the positivism of Comte, Mill, and Lewes ; the relativism of Hamilton and Mansel ; and the agnosticism of Spencer, etc. Flint's *Agnosticism* (Charles Scribner's Sons, 1903) will be read in connection with the course.

[Friday, 8.30-10.00 A. M., A₂ O.]

For other courses dealing with Epistemology, see courses 39, 46 and 48.

AESTHETICS

Dr. DAVIES :—

21 *Aesthetics.*

1 hr.

The object of this course is to review the history of thought on the subject of the beautiful ; to give a philosophical account of the foundations upon which the arts rest ; and to study scientific theory of art in its relation to general philosophical system. Bosanquet's *History of Aesthetics*, Rutgers Marshall's *Pain, Pleasure, and Aesthetics*, and other works, are read in connection with the course.

[Monday, 5.00 P. M., B₁ O.]

For other courses dealing with Aesthetics, see courses 41 and 48.

METAPHYSICS

Professor LADD :—

[22 *Systematic Metaphysics.*

2 hrs.

The principal metaphysical conceptions—such as Space, Time, Causation, Number, Substance, Quality, Relation, etc.—will be thoroughly discussed ; and the attempt will be made to unite them in a harmonious view of the physical world and of human life. This will involve a careful study of such themes as Mat-

ter and Spirit, Change and Development, the Absolute and the Relative, and God and the World. Most of the work will be research, to be done by the class and presented in the form of elaborate papers for criticism and discussion.

Omitted in 1903-1904.]

Professor SNEATH :—

23 *Philosophy of Mind.* 2 hrs.

Beginning with the facts and laws established by empirical psychology, this course aims at the construction of a metaphysic of mind. The following are some of the subjects to be treated: The concept of mind; the reality, nature, genesis, and destiny of mind; the relations of mind and body; materialistic objections, etc. The latter part of the year will be devoted to a study of the history of the philosophy of mind from Descartes to Kant.

[Thursday, 2.30-4.00 P. M., A, O.]

Dr. CHURCHILL :—

24 *The Philosophy of Nature.* 2 hrs.

Discussion of some of the main contributions made by the natural sciences to a general Theory of Experience. An attempt to harmonize philosophy with scientific fact and scientific theory with philosophy.

Topics considered: Meaning of the term "experience;" philosophy as the endeavor to unify experience; different kinds of reality; the "thing" and its "properties;" change and causality; natural law; fundamental concepts of the mathematical sciences; various forms of materialism; the doctrine of energetics; fundamental concepts of the biological sciences; Weismann *vs.* Lamarck; effect of the theory of evolution upon philosophy; psychology and the philosophy of nature: psycho-physical parallelism; influence of scientific progress upon the development of philosophy; present problems and tendencies.

Lectures by the instructor, collateral readings and brief papers by members of the class.

[Thursday, 9.30-11.00 A. M., B, O.]

For other courses dealing with Metaphysics, see courses 2, 44, 47 and 48.

PHILOSOPHY OF RELIGION

Professor LADD :—

- [25 *Philosophy of Religion.* 3 hrs.

In this course a thorough examination will be made of all the principal facts and conceptions of the religious life of man, as seen from the point of view of reflective thinking. After a brief Introduction defining the nature of the subject and its method, the nature, origin, development, and differentiation of Religion itself will be considered. All the problems connected with the Theistic, and the contrasted Positivistic, Deistic, and Pantheistic conceptions of God and of his relation to the world (Nature and the Supernatural), will then be discussed. The nature of man's religious life and of the Divine education of the race, of revelation, inspiration, miracle, and the doctrine of faith, prayer, and worship, will be carefully studied. And the concluding portions of the course will embrace such topics as the nature of the religious community, the immortality of man, and the spread of the Divine Kingdom. Reading of some of the principal authorities on these subjects will be required, with the addition of special work of research to be presented in papers and discussed in the class.

Omitted in 1903-1904.]

Professor LADD :—

- 26 *Philosophy of the Christian Religion.* 2 hrs.

A course of lectures, with papers and discussion by the class, treating of the origin, nature, and development of Religion in general, and of the place which Christianity occupies among the great world-religions. This Introduction will be followed by a discussion of the special relations in which Christianity stands to Judaism, of the historical and rational evidences for the truths taught by its Founder, of its essential religious and ethical conceptions, and the more important historical modifications which it has since undergone; and, finally, of its influence upon race-culture, and its claims to universality.

[Wednesday, 4.00-6.00 P. M. in A. O.]

Professor STEVENS :—

- 27 *The Grounds of Theistic and Christian Belief.* 1 hr.

A discussion of the principal forms of the theistic argument, and of their application to the defense of Christianity against current objections.

[Wednesday, 8.30 A. M., E. D.]

28 *The Philosophy of Religion.* 1 hr. 1st term.

This course will be based on Sabatier's *Outlines of a Philosophy of Religion*, and will be supplementary to the course in Theism (course 27).

[Monday, 3.00 P. M., E. D.]

29 *The History of the Philosophy of Religion.* 1 hr. 2d term.

A sketch of the theories regarding the nature and grounds of religious belief which are involved in the principal modern systems of philosophy.

[Monday, 3.00 P. M., E. D.]

Professor HOPKINS:—

30 *Comparative Religion.* 1 hr.

A course of weekly lectures through the year. These lectures take up the study of religion from the comparative point of view, treating of the underlying principles of religion as shown in the religious phenomena of different nations and races, from lower to higher forms of religious expressions. The course is divided into two parts. The first part, which will continue through the first term and a few weeks of the second term, will deal with the general principles of religious evolution. The second part, occupying the remainder of the second term, will be devoted to the study of special religions which illustrate these principles, the religions of China, India, Persia, Babylon, Egypt, etc. The lectures are open to all graduate students, members of the theological school, and Academic Junior and Senior classes.

[Friday, 3.00 P. M.]

PEDAGOGICS

Dr. ROWE:—

31 *Systematic Pedagogy.* 1 hr.

This course will give a general survey of the field of education. The relation of pedagogy to allied subjects, and the fundamental aims, principles and methods of education in organization, discipline and instruction will be discussed. The course thus consists of two parts: (1) *educational foundations*, and (2) *the methodology of education*. [The work for the year 1903-1904 will include only the first part.] The subjects will be considered in both their theoretical and practical aspects. Pains will be

taken to acquaint the student with the most helpful books in the wide range of educational literature. Papers and collateral reading will be required.

This course is intended both for those who wish some acquaintance with this department of knowledge and for those who intend to teach.

[Saturday, 10.30 A. M., C₂ O.]

32 *Popular Educational Maxims and their Applications.* 1 hr.

About a hundred educational maxims which play an important part in schoolroom procedure, and which generally lack definite limitation and in many cases even contradict each other, will be discussed with a view to determining on a scientific basis the limits of their validity and the true measure of their practical application in the school.

[Saturday, 9.30 A. M., C₂ O.]

33 *School Organization, Equipment and Management.* 1 hr.

An opportunity is offered a limited number of students to study the business side of schools of this vicinity. Three hours a week of observation will be required and record kept in notebooks. There will be discussions on the value and economy of the various devices seen.

Dr. McALLISTER :—

34 *Experimental Pedagogy.* 1 hr.

A summary of the results of experimental methods as applied to educational subjects. The topics treated will include : training of the senses, observation, memory, quickness of perception and thought, writing, drawing, fatigue, and study of children.

[Saturday, 11.30 A. M., 2 H. H.]

Dr. W. J. TAYLOR :—

35 *History of Education.* 2 hrs.

This course will comprise lectures, readings, and reports. It has four aims : the study of educational practices and institutions ; the study of educational theorists ; the bearing of past experience on modern problems ; education as an aspect of social development. It is especially, but not exclusively, adapted to those who are interested in educational work.

[Monday and Friday, 5.00 P. M., B₁ O.]

36 *Philosophical Foundations of Education.* 1 hr.

This course will examine certain fundamental philosophical conceptions of present interest, such as evolution, freedom and determinism and the question of self-activity, dualism and monism, the nature of personality, etc., and seek to determine their bearings on a theory of education. The course, while freely critical rather than dogmatic, will aim to develop a workable *philosophy* of education. Lectures, readings and papers.

[Thursday, 5.00 P. M., B₁ O.]

For a course on Religious Education, see Prof. Brastow's course on *Christian Pedagogy* offered to divinity students. For other courses dealing with Pedagogics, see courses 6 and 12.

HISTORY OF PHILOSOPHY

Professor DUNCAN :—

*38 *Ancient Philosophy.* 2 hrs.

A study of the history of philosophy from its origin among the Greeks down to the opening of the Modern Period, with cursory reading of selected specimens of the philosophical literature of the periods studied. Especial attention will be given in Greek philosophy to Plato and Aristotle and the post-Aristotelian schools.

[Tuesday and Thursday, 9.30–10.30 A. M., A₂ O.]

39 *Modern Philosophy.* 3 hrs.

A critical study of the systems of speculative thought from Descartes to the present time, especially of the great systems of the XVIIth and XVIIIth centuries, with cursory reading of philosophical masterpieces from Descartes to Kant: Descartes' *Method* and *Principles of Philosophy*, pt. I; Bacon's *Novum Organum*; Spinoza's *Ethics*—selections; Locke's *Essay on Human Understanding*—selections; Leibnitz's *Monadology* and *Philosophical Opuscles*; Berkeley's *Principles of Human Knowledge*; Hume's *Inquiry concerning Human Understanding*; Reid's *Inquiry into the Human Mind*; Kant's *Prolegomena to any Future Metaphysics*. Two hours are devoted to expository and critical lectures; the third hour (which may be changed to two hours, if desired) to the presentation and discussion of papers by the students, and to the informal consideration of important problems, especially of those relating to the philosophy of knowledge.

[Tuesday, Thursday, and Saturday, 8.30 A. M., A₂ O.]

Dr. DAVIES :—

40 *Medieval Philosophy.*

1 hr.

In this course the continuity of philosophical reflection will be studied from the time of the later Greek philosophers to Descartes. Attention will especially be paid to the influence of Christianity in modifying and transcending Greek thought; also to the systems that grew up on the basis of theology; and to the revival of learning which created the new spirit in science, art, ethics and religion. The value of these speculative movements for modern thought will be constantly kept in sight and critically estimated. Harnack's *History of Dogma*, with special reference to the original documents, will be a text-book for the course.

[Wednesday, 10.30 A. M., A, O.]

Dr. CHURCHILL :—

41 *Plato's Dialogues.*

2 hrs.

Analysis and discussion of the most significant Dialogues, which the class will read in translation. Plato's position in the history of thought, his mastery of literary art, his depth of philosophic insight, his struggles for social reform, his answers to great problems of modern times. Not exhaustive criticism but sympathetic appreciation of one of the world's greatest thinkers and noblest reformers.

[Monday and Friday, 10.30 A. M., B, O.]

Dr. HESS :—

42 *The Philosophical Writings of Cicero.*

1 hr.

A study, in the light of modern reflection on the same subjects, of Graeco-Roman eclectic thought on the problems of philosophy as contained in the philosophical writings of Cicero. The following works of Cicero will be read in the best renderings available: *de Finibus*, *de Natura Deorum*, *de Officiis*, *Academica*, *Tusculanae Disputationes*.

[Friday, 8.30 A. M., B, O.]

[The two following courses may be taken either as studies in philosophy or as studies in Greek. Philological discussions will be introduced into both these courses in so far as such discussions may be necessary to a clear understanding of the thought involved.]

Dr. STEARNS :—

43 *Pre-Socratic Philosophy.* 2 hrs.

The sources and remains of the earliest Greek philosophy are critically examined and interpreted with a view to explaining the origin and first developments of that line of reflective thinking which has had most influence upon modern scientific and philosophical ideas and problems.

[Tuesday and Thursday, 10.30 A. M., B₁ O.]

44 *Aristotle's Metaphysics.* 2 hrs.

Selected chapters in the *Metaphysics* will be translated and interpreted. Especial emphasis will be laid upon the new and enduring conceptions which underlie Aristotle's thinking. The effort will be constantly made to understand the philosophical thought of the author, and to illustrate and criticise it by comparison with the now current thought on the same topics.

[Wednesday, 2.00–3.30 P. M., B₁ O.]

For other courses dealing with the History of Philosophy, see courses 14, 20, 21, 29 and 45–48.

PHILOSOPHICAL CRITICISM

Professor LADD :—

[45 *Modern Pantheism and Pessimism.* 2 hrs.

Schopenhauer's *World as Will and Idea* is read with constant comparison with the views of ancient and modern pessimists, especially with Hartmann. Most of the work is research, the results being presented in elaborate papers for discussion before the class.

Omitted in 1903–1904.]

46 *Kant Seminary.* 2 hrs

The entire year will be spent in a thorough, critical study of Kant's *Critique of Pure Reason*. The work will be done by the students themselves, under the direction of the professor ; and each member of the class will be, in turn, responsible for an elaborate paper, interpreting and criticizing the positions of the author of the critique,—to be followed by questions and discussion by the class. The passages assigned for this Seminary work will correspond throughout the year to those assigned for reading in the *German* of course No. 31 of that Department.

[Monday, 3.15–5.00 P. M., 4 H. H.]

Professor DUNCAN :—

- [47 *The Philosophy of Herbert Spencer.* 2 hrs.

This course is a study of the Evolution Theory of Spencer in its psychological, ethical and metaphysical aspects. Spencer's *First Principles*, *Principles of Psychology* (selections), and *Data of Ethics* are read and discussed.

Omitted in 1903-1904.]

Dr. HESS :—

- 48 *The Philosophy of Lotze.* 2 hrs.

An exposition and criticism of the philosophy of Lotze as contained in his *Microcosmus*, which deals with such philosophical problems as the relation of philosophy, science and religion ; the different views of nature, especially the mechanical and teleological explanations ; the conception of "law" in nature, and evolution ; the existence and the immortality of the soul ; man as a moral and as a religious being ; the existence and nature of God, and the relation of God to the world ; the problem of evil ; etc.

[Saturday, 8.30-10.00 A. M., B₁ O.]

- *49 *Popular Discussions in Philosophy.* 1 hr.

This is a course in philosophical criticism, and is intended to develop and train the critical spirit ; to deepen interest in the more profound themes of philosophy by showing their connection with popular life and thought ; and to vindicate sound psychology and a theistic philosophy. To this end some of the popular philosophical papers of Huxley, Tyndall, Clifford, Spencer and others are read and freely discussed.

[Wednesday, 8.30 A. M., B₁ O.]

Dr. MONTGOMERY :—

- 50 *French Philosophical Writings in the Original.* 2 hrs.

The class will read some of the essays in Caro's *Philosophes et Philosophie*, and also extracts from important philosophical works and from recent philosophical magazines. The lectures will be upon the French schools of philosophy of the nineteenth century.

[Thursday, 2.00-3.45 P. M., B₁ O.]

II. THE SOCIAL SCIENCES, HISTORY, AND LAW

ARTHUR M. WHEELER, LL.D.	D. CADY EATON, M.A.
WILLIAM G. SUMNER, LL.D.	CHARLES H. SMITH, LL.D.
GEORGE B. ADAMS, Ph.D.	HENRY W. FARNAM, R.P.D.
WILLISTON WALKER, Ph.D., D.D.	EDWARD G. BOURNE, Ph.D.
JOHN C. SCHWAB, Ph.D.	IRVING FISHER, Ph.D.
HENRY C. EMERY, Ph.D.	FREDERICK WELLS WILLIAMS, B.A.
OLIVER H. RICHARDSON, Ph.D.	HERBERT E. GREGORY, Ph.D.
CLIVE DAY, Ph.D.	ALBERT G. KELLER, Ph.D.
HENRY B. LEARNED, M.A.	WILLIAM B. BAILEY, Ph.D.
GEORGE GRANT MACCURDY, M.A.	JOHN P. NORTON, Ph.D.
ERNEST H. BALDWIN, Ph.D.	PHILIP P. WELLS, Ph.D.
CHALFANT ROBINSON, Ph.D.	

A BIBLIOGRAPHY OF ECONOMIC AND KINDRED SUBJECTS is maintained by the instructors in Economics, and is available to students in the University Library. The department of Economics also collects statistical charts, tables and slides, which are preserved in E, Osborn Hall.

THE BOOCOCK LIBRARY (founded in 1896 by Mr. and Mrs. S. W. Boocock) is a department library in the Social Sciences, which supplies students with the most rare and special works in those subjects which the University Library does not contain. Any books needed by special students will be obtained. Students of all degrees of advancement will find reference books in the Boocock Library, and are invited to apply for access to it to Prof. Sumner.

THE ANTHROPOLOGY CLUB meets fortnightly for papers and discussions in Anthropology (Historical and Somatic), Ethnology, Sociology, and Demography.

When the classes in courses *1 and 2 reach the proper degree of advancement, they are divided into squads for visits to the Museums of Anthropology and Ethnography under the guidance of competent instructors.

THE POLITICAL SCIENCE CLUB, comprising the graduate students and instructors in the social sciences, has its headquarters at 11 White Hall, which are open to mem-

bers at all times. The department library there installed contains a collection of economic works generally required by advanced students. Fortnightly meetings are held during the academic year. Announcement of the subjects discussed is made in the University Bulletin.

Opportunities are given students to visit such charitable and penal institutions and agencies of social betterment as are in New Haven, or within easy access of it.

The HISTORICAL SEMINARY ROOM, No. 90 High street, contains a reference library to which graduate students may have access at all hours.

The HISTORICAL CLUB meets fortnightly for the reading and discussion of papers and for reports on current periodicals.

Professor SUMNER :—

*1 *The Science of Society.*

2 hrs.

An elementary course, with text-book lessons and daily tests, in Anthropology and Ethnology, with the origin of civilization, and the development of institutions.

Lectures upon Systematic Sociology (Societology).

Topics covered: The organization of society; the individual and the social; social forces; militarism and industrialism; property; marriage, family, and the status of women; primitive notions in religion and philosophy; civil government, law and rights; slavery and classes; economic interests and their collisions; conditions of welfare; origin of moral standards; reaction of reason on experience. These topics are treated exclusively in the light of Historical Anthropology and Ethnology.

[Monday and Friday, 8.30 A. M.]

2 *The Science of Society.*

2 hrs.

A course with a German text-book (Lippert, *Kulturgeschichte*, 2 volumes, Stuttgart, 1887), for those who are able to read difficult German. The exercises are coincident with those of the previous course.

(The members of the course must provide themselves with the text-book before September 24, 1903.)

[Monday and Friday, 8.30 A. M.]

* Indicates courses primarily for undergraduates.

- [3] *Anthropology.* 2 hrs.

A careful study of Ranke's *Der Mensch* (2d ed.), with an examination of the separate topics by means of all the appropriate material.

Omitted in 1903-1904.]

- [4] *The Self-Perpetuation of Society.* 2 hrs.

(Section II of Systematic Societology.) An historical and ethnological study of the evolution of the *Marriage Institution*; *mores*, taboo, idealization. The *Family*; its forms, parenthood, kinship, status of woman. Comparative legislation on domestic relations. *Population*. The history, law and policy of population.

Omitted in 1903-1904.]

- 5 *The Mental Reactions.* 2 hrs.

(Section IVa of Systematic Societology.) An ethnological study of the development of the *Mental Processes* and of the growth and contents of the *Mental Outfit* of the human race in the earlier stages. Ghost-fear, daimonism, otherworldliness, knowledge and pseudo-knowledge, the aleatory element, world-philosophy, *mores*, codes, taboo, therapeutics, etc.

[Monday, 10.30, Thursday, 9.30 A. M.]

- 6 *The Beginnings of the Industrial Organization.* 2 hrs.

An ethnological study of the industrial organization from its earliest beginnings. Division of labor between the sexes and the special functions of each; regulation of industry; slavery; formation of capital; discoveries and inventions; domestication of animals and plants; money, etc.

[Thursday and Friday, 10.30 A. M.]

Professor FARNAM :—

- 7 *The Principles of Public Finance.* 2 hrs.

A systematic treatment of the subject of government expenditure, government income, and government debt, illustrated by references to the financial statistics and experience of modern states.

[Tuesday and Thursday, 8.30 A. M.]

- [8] *Social Politics.* 2 hrs.

A critical examination of the results of legislation designed to strengthen the economic position of the weaker social classes.

Omitted in 1903-1904.]

- [9 *Pauperism and Crime.* 1 hr.
A study in social pathology, mainly with reference to its economic aspects.
Omitted in 1903-1904.]

- 10 *The Modern Labor Movement.* 2 hrs.
An historical study of the efforts made by wage workers to improve their condition, together with a critical examination of the economic theories which have been developed in support of the movement. The lectures will deal mainly with the 19th century, and will include the growth of Socialism, Labor Organizations, Labor Representation, and Labor Legislation. The study of the literature of the subject at first hand will also be undertaken by the students.
[Wednesday and Friday, 8.30 A. M.]

Professor SCHWAB :—

- *11 *Financial and Industrial History.* 2 hrs.
Lectures upon the mechanism of money and banking, as illustrated especially in the financial history of the United States ; and upon the origin and growth of the modern industrial organization.
Collateral reading : Dunbar's *Banking*, 1902 ; Dewey's *Financial History of the U. S.* ; Hobson's *Evolution of Modern Capitalism* ; Jenks' *Trusts*, etc.
[Monday and Wednesday, 11.30 A. M.]

- 12 *Finance.* 1 hr.
Lectures and individual research.
Topics covered : the methods and usages of the money market ; instruments of credit and other commercial documents, their economic functions ; corporate securities and accounts.
Collateral reading : Cleveland's *Funds and their Uses* ; Greene's *Corporation Finance* ; Sumner's *Investment Securities* ; *Financial Review*, etc.
[Tuesday, 11.30 A. M.]

- 13 *Industrial Combinations.* 1 hr.
Lectures and individual research.
Topics covered : the organization, promotion, operation and finances of industrial combinations or so-called trusts ; their relation to the wage-earner, the consumer and the investor.

Collateral reading : *Financial Review, Report of the Industrial Commission*, etc.

[Thursday, 11.30 A. M.]

14 *Public Finance.* 1 hr.

Lectures and individual research.

Topics covered : The methods and problems of taxation, especially in the United States ; legal and economic aspects ; the taxation of corporations ; municipal finances ; Federal finances.

Collateral reading : Plehn's *Public Finance*, etc.

[Wednesday, 12.30 P. M.]

15 *Economic Research.* 1 hr.

Lectures upon the logical methods of economics ; the methods of economic research, illustrated by reference to typical classes of investigation ; bibliographical review of economic literature, especially government and other serial publications ; and, if time allows, practice in the preparation of topical bibliographies.

[At an hour to be arranged.]

Professor SCHWAB, Dr. BAILEY, and Dr. NORTON :—

*16 *Railroads.* 2 hrs.

Lectures and individual research.

Lectures upon the development of railroad transportation in the United States and in Europe ; the financial and technical problems ; railroad consolidation and taxation ; the Interstate Commerce Act, and its relation to pooling and discrimination.

Individual research : analysis of railroad reports and statistics.

Collateral reading : Hadley's *Railroad Transportation*, etc.

[Tuesday and Thursday, 9.30 A. M.]

Professor IRVING FISHER :—

[17 *Economic Theory.* 2 hrs.

This course will treat of (1) methods of economic study with especial reference to the use of mathematics in economics and statistics and (2) the applications of these methods to the more difficult problems of economic theory, such as value, prices, price levels, capital, interest, distribution, and international trade.

Omitted in 1903-1904.]

18 *Theory of Capital.* 2 hrs.

Capital in its relation to income, distribution and interest. Among other topics will be considered the effects of invention on the accumulation of wealth, the influence of modern capitalistic methods of production on the laboring classes, the socialistic criticism of these methods, and the history and theory of the rise and fall of great fortunes.

[Monday and Friday, 9.30 A.M.]

Professors IRVING FISHER and EMERY :—

*19 *Elementary Economics.* 3 hrs.

A course introductory to all the subsequent courses in economics. Lectures, one hour a week,—for one-half the year by Professor Fisher on the outlines of economic science; for the remaining half of the year by Professor Emery on contemporary economic problems. Two hours a week will be occupied by quiz-exercises in small sections under Professors Fisher and Emery, Assistant Professor Day and Dr. Norton.

Text-books used: Cannan's *Elementary Political Economy*, Hadley's *Economics*, and Jevons' *Money and the Mechanism of Exchange*.

Students already familiar with the elements of economics may arrange with the instructors to omit the above quiz-exercises, which are primarily intended for undergraduate students.

Lectures: Tuesday or Thursday, 5.00; (2d term, 3.00). Quiz-exercises: Monday and Friday, 8.30, 10.30 and 11.30; Tuesday and Saturday, 8.30; Tuesday and Thursday, 10.30 and 11.30.

Professor EMERY —

20 *Commerce and Commercial Policy in the Nineteenth Century.* 2 hrs.

A study of the growth of international trade and the changes in commercial policy in the last one hundred years, especially in the leading countries of Europe. A reading knowledge of French or German is important for the work of this course.

[Wednesday and Friday, 12.30 P. M.]

[21 *History of Economics.* Pt. I. 2 hrs.

The history of economic ideas, with special reference to economic policy, from the Middle Ages to the middle of the nineteenth century. Lectures and readings in contemporary authors, with class-room discussion.

Omitted in 1903-1904.]

22. *History of Economics.* Pt. II. 2 hrs.

This is a continuation of the above course, uses the same methods, and is given in alternate years. It deals with the later reactions from the Classical School, protectionism, socialism and the historical school.

[Tuesday and Thursday, 12.30 P. M.]

Assistant Professor DAY :—

23. *Economic Organization in Europe.* 2 hrs.

A study of the economic organization in the different countries of Europe, with reference in each to the relative importance of agriculture, manufactures and trade, the characteristic organization of each branch of production, the influence of economic conditions on social and political organization and on international position.

[Tuesday and Thursday, 9.30 A. M.]

24. *Economic History of Europe.* 2 hrs.

A study of the development of the industrial organization in Europe from the period of the Germanic invasion to the industrial revolutions of the nineteenth century. The course is designed mainly to describe the development of economic institutions, incidentally to point out the bearing of this development on that of legal and political institutions.

[Monday and Friday, 9.30 A.M.]

Dr. BAILEY :—

- *25. *Elementary Statistics.* 2 hrs.

The sources and reliability of statistical data are discussed, and the methods of distinguishing true and false inferences are pointed out. Index numbers are studied, and the lectures treat of the statistics of population, crime, suicide, property, etc. The attempt is made to determine some of the laws which govern the group-actions of men.

Text-book : Mayo-Smith, *Science of Statistics.*

[Division I, Tuesday and Thursday, 11.30 A. M.]

[Division II, Tuesday and Thursday, 12.30 P. M.]

- *26. *American Social Conditions.* 2 hrs.

A critical study of the principal phenomena which are characteristic of American society. The problems connected with

the negro, concentration of urban population with the attendant dangers, immigration, crime, poor relief, labor organizations, liquor question, etc., will be presented in lectures.

Text-book : Wright, *Elements of Practical Sociology*.

[Wednesday and Friday, 10.30 A. M.]

27 *Labor Problems.*

1 hr.

The various theories concerning the payment of labor, the conflicts between capital and labor, strikes, lock-outs, coöperation, profit-sharing, arbitration, compulsory insurance, the effects of the increasing employment of women, and the various plans for the amelioration of the condition of the workingmen. Each member of the class will carry on a special investigation of an assigned topic.

[Saturday, 10.30 A. M.]

Assistant Professor KELLER :—

*28 *The Science of Society.*

2 hrs.

This course is introductory to a course in the Systematic Science of Society to be offered in 1904-05 by Professor Sumner. In connection with text-books, upon which there will be daily writing or recitation, lectures will be given, designed to supplement and elucidate the text, and to afford the student a general knowledge of the doctrine of evolution, as it applies to man and human society.

Topics to be covered : the antiquity of man ; the relation of man to other animals ; racial differences ; language ; the arts of life ; the spirit-world, etc. A general description of the races of man, and a more special study of one or more selected races and societies will follow.

[Tuesday and Saturday, 8.30 A. M.]

[29 *Colonization (Economic and Social).*

2 hrs.

Colonization as a sociological and ethnological process. A preliminary sketch of ancient and medieval commerce and colonization, followed by a closer study of the experience of the several colonizing states of modern times. Emigration, colonial trade, frontier society, the native question, etc.

Students are required to undertake special investigation involving the use of some foreign language.

Omitted 1903-1904.]

31 *Ethnology.* 2 hrs.

A study of existing nations and tribes ; their manners, customs, etc.; analysis and comparison of national traits. The course will deal chiefly with the life of savage and partially civilized peoples, and will be based primarily upon a careful study of Ratzel's *History of Mankind*. The text-book work will be supplemented with lectures, papers and the use of all the illustrative material that may be available.

[Tuesday and Thursday, 3.00 P. M.]

Dr. NORTON :—

32 *Trade Statistics.* 1 hr.

The condition of trade viewed from the standpoint of (1) the international movement, (2) bank clearings, (3) the money supply, (4) the outlook for the harvests, and (5) earnings of corporations. Crop forecasts, visible supplies, etc.

[Monday, 4.00 P. M.]

[33 *Interpolation.* 1 hr.

Methods of fitting curves to series of statistics in analysis of relations among variables ; also the theory of correlation of two or more variables. Practice in handling statistical data.

Omitted in 1903-1904.]

[34 *Statistical Theory of the Evolution of Man.* 2 hrs.

Statistical methods for handling the data of the somatic evolution of man. Special reference will be made to the problems under variation, heredity, panmixia, regression, selection and prepotency, with passing notice of some practical applications in life insurance. The methods of Pearson, Yule and Galton will be discussed.

Omitted in 1903-1904.]

Mr. MACCURDY :—

35 *Physical Anthropology.* 2 hrs. 1st half-year.

Lectures and demonstrations. A study of man's position in the zoölogical scale and his structure from the racial standpoint, including characters of race, age, and sex, individual variations, and pathological conditions. In the laboratory, students will have access to suitable collections as well as practice in the use of apparatus.

36 *Prehistoric Anthropology.* 2 hrs. 2d half-year.

Man's place in the geological scale. Physical characters of the earliest known races, their environment and stages of culture. Paleolithic, Neolithic, and Bronze Ages, Hallstatt period and on to historic times. Illustrated by original specimens from the Museum collections and by casts, photographs, etc.

*37 *Insurance.* 2 hrs.

Lectures one hour each week by heads of insurance companies and others practically acquainted with insurance; the second hour will be devoted to a quiz-exercise.

This course is intended for those who wish a general knowledge of insurance, including any who are planning to enter the field professionally in office or agency work. It will treat of the general nature and economic functions of insurance in all its branches, especially life, fire and marine insurance.

It will embrace (1) the history and statistics of the development of insurance; (2) the study and application of the theory of chances to the calculation of insurance premiums, for various kinds of policies; (3) the economic influence and importance of insurance; (4) office and agency organization.

Mr. John K. Lunger, Vice-President of the Traveler's Insurance Company, will give a talk explaining the character of this course on Friday, April 17, 1903, at 5 P. M., in A 1, Osborn Hall.

[Monday and Friday, 5.00 P. M.; 2d term, 3.00 P. M.]

Professor WOOLSEY :—

38 *International Law.* 1 hr.

Lectures with monthly written tests. An exposition of the rules which govern the relations of states in peace and in war. Designed to be useful in understanding international politics; for training in intelligent citizenship; also as a basis for certain branches of legal practice.

[Wednesday, 10.30 A. M., in A, Hendrie Hall.]

Dr. C. ROBINSON :—

39 *Reciprocity Treaties.* 1 hr. 1st term.

A lecture course that will cover all the reciprocity treaties which the United States has entered into up to the present time. These treaties will be considered both as a part of the diplomatic history of the country, and as practical examples of the working of the principle of reciprocity in national economy.

HISTORY

Professors ADAMS and BOURNE :—

- 40 *Methods of Historical Research and Criticism.* 1 hr.

The first half of this course consists of a discussion of the principles of historical criticism, for which Langlois and Seignobos' *Introduction to the Study of History* will serve as an outline. Several typical problems of internal and external criticism will be examined by the class and thoroughly analyzed. The second half, conducted by Professor Adams, consists of practical exercises in the study of selected historical documents, so arranged as to furnish examples of all the important points of method. The weekly exercises in this course may occupy two hours.

[Monday, 3.00 P. M.]

For a course in Latin Palaeography see Latin, course 47.

Assistant Professor F. W. WILLIAMS :—

- *42 *Ancient Oriental Nations from the earliest times.* 2 hrs.

A comprehensive survey of the beginnings of civilization, and its development among the principal nations of antiquity, including Babylonia, Assyria, Egypt, Phoenicia, and Media. This course illustrates the connection of Biblical and profane history, discusses the origins of political and social institutions, religions, the arts and sciences, and the Asiatic sources of European civilization, and constitutes an introduction to the study of history.

[Monday and Wednesday, 12.30 P. M.]

Professor PERRIN :—

- 44 *Greek History.* 3 hrs.

A critical study of Herodotus, books vii-ix, as source for the invasion of Xerxes, proceeding on the lines laid down in Macan's edition of Herodotus, iv-vi.

[See course 1 (b), Greek, p. 69.]

Professor WALKER :—

- 45 *General Church History.* (1st Course.) 3 hrs.

The aim of this course for the year 1903-4 is to present an outline of Church history from the beginnings of Christianity to the end of the Crusades. Special attention is paid to the

spread of Christianity, the conversion of the Roman Empire, Monasticism, the effects of the Germanic invasions, and the efforts of the Church for the Christianization of northern and eastern Europe, the rise of the Papacy, its conflict with the Empire, and the Crusades.

[Wednesday, Thursday and Saturday, 9.30 A. M.]

Professor ADAMS :—

*46 *Medieval History (first half).* 2 hrs.

From the beginning of the fourth to the tenth century. The subjects most fully discussed will be the fall of Rome ; the spread of Christianity ; the foundation and organization of the new German states ; the beginning and growth of the papal power ; the formation of the Frankish state ; the rise and conquests of Mohammedanism ; the empire and reforms of Charlemagne ; and the separation of his empire into the modern states.

The development of civilization will be kept constantly in view throughout, and such institutions of both church and state as exerted an influence upon later times will receive especial attention.

[I, Tuesday and Thursday, 9.30 A. M.]

[II, Tuesday and Thursday, 10.30 A. M.]

[*47 *Medieval History (second half).* 2 hrs.

From the beginning of the tenth to the middle of the fifteenth century.

The earliest organization of the modern states ; feudalism and feudal society, considered institutionally and economically ; the Holy Roman Empire and the monarchical papacy ; the crusades and their results ; the growth of commerce and the rise of the third estate to political influence ; the intellectual renaissance of the thirteenth century, with the beginning of universities and the revival of Roman Law ; the rise of England and France with contrasted constitutions, the conflict between them and the decline of Germany ; and the beginning of modern diplomacy.

Omitted in 1903-1904.]

Professors ADAMS and WALKER :—

48 *Medieval Institutions.*

A two or three years' course. Not a lecture course. The seminary method will be employed throughout and large use will be made of the original material. A rapid reading knowl-

edge of Latin, German and French is required. The object of the course is to make the student acquainted with the literature of the field, with the problems that are still unsolved, and with the sources which have been and must be used in their solution. In exceptional cases only will students be encouraged to take this course in their first year of graduate work.

a Professor ADAMS. 2 hrs.

The first year's course considers later Roman and early German institutions, and their combination in the Frankish state; the development of the papal power and its special institutions; the institutions of Charlemagne's empire; the origin of feudalism; and the beginnings of national governments.

b 1 Professor WALKER. 1 hr.

Second year's course covering the French institutions of the Feudal period in general and with special reference to their development from Louis VI to Louis IX. The aim will be to trace the relations and powers of the various classes of the French people, the nobility, clergy, rural and city populations, and to consider the growth of the authority of the French monarchy during one of the most significant periods in its development; to discuss the methods by which the freedom of the lower classes was increased and the influence of the crown extended; and to examine the constitution and activities of the more important organs of government.

[b 2 Professor ADAMS. 2 hrs.]

Second year's course with special reference to Norman and Angevin institutions in England. The course will open with a somewhat detailed study of feudal institutions of the tenth and eleventh centuries, and will then follow the institutional development in England from the Norman conquest to the establishment of parliament.

Omitted in 1903-1904.]

Assistant Professor F. W. WILLIAMS:—

***49 *Medieval Asia and the Mohammedan Conquest.* 2 hrs.**

An outline history of Western Asia from the death of Alexander to the conquest of Constantinople, supplementary to the history of the Roman Empire and Medieval Europe. The course combines the study of text-books and recitations on

Parthia, the Saracens and Ottoman Turks with lectures and research work on special topics connected with the period. It shows the nature of Hellenistic influence in the East, their gradual effacement under Parthian and Persian rule, and their disappearance after the Arab conquest; it treats of the development of Christianity as an institution, of its political rôle and its struggles with Paganism and Islam, and of the antagonisms between Oriental and European civilization.

[Tuesday and Thursday, 11.30 A. M., C, O.]

Professor WALKER :—

50 *General Church History.* (2d Course.) 2 hrs.

This course is in continuation of course 45, but may be taken independently of it. Pursuing the same general method, its attempt is to trace the movements preparatory to the Reformation; to discuss the influence of the Renaissance and the discoveries; to examine the reformatory attempts within the Church; to follow in outline the story of the revolt from papal obedience in Germany, Switzerland, Scandinavia, France, the Netherlands, England and Scotland, and the Roman "Counter-Reformation"; and to inquire into the religious, political and social consequences of that revolt to the Peace of Westphalia on the European Continent and to the Toleration Act in England.

[Tuesday and Friday, 9.30 A. M.]

52 *Life and Work of Calvin.* 1 hr. 2d term.

In this course Calvin's personal characteristics, his education and his relation to the intellectual movements of his time are discussed; his theology is briefly examined; and especial attention is devoted to his work as an organizer, and to the governmental, religious, and educational development of Geneva under his leadership.

Assistant Professor RICHARDSON :—

*53 *The Renaissance and the Reformation.* 1 hr.

In this course the Renaissance and Reformation will be treated primarily as intellectual movements and considered in their relations to the intellectual development of Europe; political history will be noticed in so far only as is essential.

The course differs radically in character from courses *54 and *55 and does not cover the same ground.

Students will be required to do much work in the library.

[Wednesday, 8.30 A. M.]

- [*54 *History of Northern Europe from the Reformation to the death of Frederic the Great.* 2 hrs.

During the first half of the course interest centers in the religious and political rivalries of the era of the Reformation: in the latter half, in the history of Brandenburg-Prussia from the time of its rapid economic, political and military development under the Great Elector and Frederic William I to its acquisition of world-power under Frederic the Great in contest with Austria and France.

Considerable attention will be given to the history of the Prussian constitution and to topics of economic interest, such as the decline of the Hanseatic League, the economic results of the Thirty Years' War, and the development of the resources of Brandenburg-Prussia by its greatest rulers.

Lectures and collateral reading.

This course is omitted in 1903-1904. It alternates with course *55.]

- *55 *History of France from the Reformation to the French Revolution.* 2 hrs.

This course will deal not only with the internal history of France, but also with its relations to the larger problems of modern European history—the progress of the Reformation and the Counter-Reformation, the formation and development of the modern European state-system, colonial expansion, the great wars and treaties of the modern epoch, the growth of political and economic science and the political and intellectual movements preparatory to the Revolutionary Epoch.

Lectures and collateral reading.

[I, Monday and Friday, 11.30 A. M.]

[II, Monday and Friday, 12.30 P. M.]

This course alternates with course *54.

- [56 *Treaties of the Reign of Louis XIV.* 1 hr.

The work will be based upon Vast's *Les Grands Traités du Règne de Louis XIV.*

This course is omitted in 1903-1904.]

- 57 *Brandenburg-Prussia under the Great Elector.* 1 hr.

Especial attention will be given to economic and constitutional developments. Readings will be assigned in Bornhak's *Geschichte des Preussischen Verwaltungsrechts*. The main part of the work will consist in the criticism of select documents upon special subjects.

***58 *Studies in the History of the Eighteenth Century.* 1 hr.**

The following are the principal topics considered: English theories of government, French theories of government, and their interaction; the decline of the French Monarchy to the Revolution, embracing the study of the practical workings of the system and the causes of decline; theories of benevolent despotism, with practical examples of their application in the Prussia of Frederic the Great, the Austria of Joseph II, and the Spain of Charles III.

The student will use much original material, and a reading knowledge of French or German is required.

[Tuesday, 10.30 A. M.]

Professor WHEELER:—

59 *History of Treaties, 1763-1815.* 1 hr.

[Wednesday, 5.00 P. M.]

***60 *History of Europe since 1789.* 2 hrs.**

Mainly political, introductory to European politics of our day.

[Tuesday and Thursday, 9.30 A. M.]

[61 *Investigation of Special Topics in European History from 1789 to 1815.* 1 hr.

A general knowledge of the period, and ability to read French or German easily, are required.

Omitted in 1903-1904.]

Professor ADAMS:—

***62 *English History to 1485.* 2 hrs.**

Chiefly Constitutional. The political history will be studied as a basis for the Constitutional. The purpose of this course will be to show how the Anglo-Saxon system of self-government arose, and how the chief features of the present English Constitution took form. Especial attention will also be given to the rise of judicial institutions, the organization of the courts, the introduction of the jury, the beginning and growth of the Common law, etc. The more important Constitutional documents will be discussed in detail. While the course is of especial value to those who intend to study law, the interests of the general student will be kept in view.

[Wednesday and Friday, 9.30 A. M.]

Assistant Professor RICHARDSON :—

*63 *English History from 1485.* 2 hrs.

Political and constitutional. Particular attention will be given to the development of political and judicial institutions, and to the colonial expansion of England. The more important constitutional documents will be discussed in detail as well as such other contemporary sources as are accessible. While this course is of special value to those who intend to study law, the interest of the general student will also be kept in view.

[Monday and Friday, 11.30 A. M.]

64 *English History from the accession of the Tudors to the reign of William and Mary.* 2 hrs.

A research course which extends through two years and lays more stress upon the constitutional than upon the political side of the subject. Construction of bibliographies, and reports based upon independent investigation of the sources, form an important part of the work.

a. The course for the first year embraces the period between 1485 and 1603. The reigns of Edward VI and Mary are treated with comparative brevity in lectures, with assigned readings from primary and secondary sources, while particular attention is paid to the reign of Henry VII and to constitutional developments under Henry VIII and Elizabeth. [Course *a* is not given in 1903-1904.]

b. The course for the second year embraces the period between 1603 and 1688. The constitutional history of the Puritan Revolution will receive especial consideration. The work consists in large part of a systematic study of the documents contained in Prothero's *Statutes and Constitutional Documents*, and Gardiner's *Constitutional Documents of the Puritan Revolution*. [Course *b* is given in 1903-1904.]

Professor WHEELER :—

64 *Constitutional and Political History of England since 1760.* 2 hrs.

Lectures and required reading.

Professor BOURNE:—

- *65 *American History [1492-1763].* 2 hrs.

This course will deal with the history of the American Colonies from the beginning of the discoveries until the beginning of the American Revolution. The nature and objects of colonies, the character and aims of the colonists, the political, economic, and social development of the colonial communities, will be the leading topics.

The course will include a survey of the French and Spanish colonial establishments in America. Lectures, required reading and the study of selected documents:—

[Tuesday and Thursday, 9.30 A. M.]

- *66 *American History [1763-1860].* 2 hrs.

A general course in the political History of the United States from the beginning of the Revolution to the Civil War. The causes and progress of the Revolution, the formation of the Union, the rise and growth of parties, the development of democracy, the influence of the westward expansion and of slavery on political life, and the origin and significance of the more important economic questions will be discussed. Lectures and required reading.

[Monday and Friday, 10.30 A. M.]

- 67 *The American Revolution and the Formation of the Union.* 2 hrs.

After a brief survey of the English colonial system as it existed in the first half of the eighteenth century, the causes and progress of the Revolution will be taken up in detail. Considerable attention will be given to the political theories of the time, and to the influence of the Revolution in Europe.

In the second part of the course especial attention will be given to the political and economic forces making for a more compact union and to the contemporary political discussion.

[Tuesday and Thursday, 3.00 P. M.]

- [68 *Diplomatic History of the United States.* 2 hrs.

History of the foreign relations of the United States from the end of the Revolution to the close of the Civil War. Special attention is given to the relations with Spanish America and to the annexations of territory. A reading knowledge of Spanish will be useful for the prosecution of this course.

Omitted in 1903-1904.]

Professor SMITH :—

69 *American History (Constitutional).* 1 hr.

(a) A study of the Federal Constitution from the historical point of view, tracing the origin, purpose, and working of its principal provisions. Lectures and collateral reading, with an examination at the close of the course.

(b) An extended course of reading in speeches and writings of statesmen and jurists, and decisions of the Supreme Court, whereby the constitution has been expounded and developed ; with inquiry into important phases of public opinion on the constitution. For individual study, with occasional reports and examinations, and an elaborate paper at the close of the course.

(This course may be made to count as one hour, or two hours, according to amount and character of work done.)

[Saturday, 10.30 A. M., D₂ O.]

70. *United States since 1860.* 2 hrs.

The first half of the year will be given to a study of the Civil War. The second half to a study of Reconstruction, and some other important features of our history down to the present time. Either half of the course may be taken without the other, and when so taken will be counted as one hour for the year. A research course, with weekly reports and discussions. (A few undergraduate Seniors may be admitted to this course.)

[Tuesday, 10.30 A. M.—12.20 P. M., D₂ O.]

Dr. E. H. BALDWIN :—

71 *New England Colonial Society.* 1 hr.

A study of social conditions in New England as revealed by colonial legislation. Colonial records will serve as a basis for the work, but other contemporary material will be used. The course will consist of two parts, each covering one year ; either part may be taken independently of the other.

(a) The seventeenth century to 1689. In this period such topics as the immediate problems of settlement, measures for the protection of life, property and morals, modes of communication, and aids to material development, will be considered with special reference to their influences upon the life of the people.

(b) 1689 to the Revolution. In this period the activities connected with the French and Indian wars, the African slave trade, ship building, privateering, etc., will be considered with special reference to their influences upon the manners and morals of the people.

Professor D. CADY EATON :—

79 *History of Art.*

2 hrs.

First term, Assyrian, Egyptian, and Grecian Art. Second term, Roman, Gothic, and Renaissance Art. Lectures and recitations.

Text-books : Marquand and Frothingham's *History of Sculpture* ; A. D. F. Hamlin's *History of Architecture* ; John C. Vandyke's *History of Painting*.

III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.

EDWARD L. CURTIS, Ph.D., D.D.	FRANK C. PORTER, Ph.D., D.D.
BENJ. W. BACON, Litt.D., D.D.	FRANK K. SANDERS, Ph.D., D.D.
CHARLES C. TORREY, Ph.D., D.D.	CHARLES F. KENT, Ph.D.
WILLIAM M. PATTON, Ph.D.	FREDERICK LENT, M.A.

Connected with the department are the Seminary rooms, the Reference Libraries, the Special Collections and the Semitic and Biblical Club.

The SEMINARY ROOM in 9 Fayerweather Hall is adjacent to the two recitation rooms used by the department. It contains a good reference library in Biblical Literature, and can be utilized for purposes of study at all times.

A REFERENCE LIBRARY, available for students, situated very near to the departmental library proper, is the Trowbridge Reference Library of the Divinity School. It contains more than 3,000 carefully selected volumes, and is particularly rich in works of reference for Biblical study.

The SALISBURY COLLECTION of Oriental manuscripts, books and works of reference, the library of the American Oriental Society, the collection of rare and valuable Arabic manuscripts, made by Count Landberg, acquired recently for Yale University through the munificence of Morris K. Jesup, Esq., of New York City, and the well-stocked Semitic sections of the general Library, furnish exceptional advantages and opportunities for independent research to the student of Semitic literature.

The SEMITIC AND BIBLICAL CLUB, composed of the instructors, the students who are studying for a degree, and others who are interested in the work, holds stated semi-monthly meetings, at which papers on subjects of interest to Biblical students are presented and discussed.

The BIBLICAL RESEARCH CLUB meets for discussions of a semi-popular character on Biblical subjects.

HEBREW

Professor CURTIS :—

- *1 *Elementary Hebrew.* 4 hrs.
The year's work includes a mastery of the elements of Hebrew and the translation of Genesis.
- 2 *The Book of Job.* 1 hr.
The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.
- [3 *Selections from Proverbs, and the Five Megilloth.* 1 hr.
The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.
Omitted in 1903-1904.]
- 4 *Selections from the Psalter.* 2 hrs. 1st term.
The grammatical and historical exegesis of the text, with attention to New Testament interpretation and homiletical application.
- 5 *The Book of Isaiah.* 2 hrs. 2d term.
The grammatical and historical exegesis of the Hebrew text.

Professor KENT :—

- 6 *Hebrew Seminary.* 2 hrs.
A knowledge of Hebrew, Hellenistic Greek and German is required. In 1903-1904 the more important syntactical and textual problems presented by the Old Testament historical books will be considered.
- [7 *The Minor Prophets.* 2 hrs. 1st term.
Critical translation and interpretation, with a special study of the political, social and religious teachings of each prophet. The elements of Hebrew grammar will also be thoroughly reviewed.
Omitted in 1903-1904.]
- [8 *Hebrew Syntax.* 2 hrs. 2d year.
A study of the principles of Hebrew Syntax, with the reading of a variety of passages with special reference to a syntactical interpretation.
Omitted in 1903-1904.]

Mr. LENT :—

- *9 *Elementary Hebrew.* 2 hrs.
A study of the elements of the Hebrew language in connection with the reading of Genesis i-viii and of selected passages of easy Hebrew.
- *10 *Advanced Hebrew.* 2 hrs.
Reading of the Books of Samuel and a thorough review of the elements of Hebrew grammar and syntax, followed by practice in rapid sight reading.

COGNATE SEMITIC LANGUAGES

Professor TORREY :—

- 11 *The Koran.* 3 hrs. 1st half-year.
Reading of selected suras, with a supplementary study of the life of Mohammed.
- [12 *The Arabic Historians.* 2 hrs. 2d half-year.
The reading of Ibn Hishâm's account of the battle of Bedr.
Omitted in 1903-1904.]
- 13 *Arabic Poetry.* 2 hrs. 2d half-year.
The reading of selections from Nöldeke's *Delectus Veterum Carminum Arabicorum.*
- 14 *Elementary Syriac.* 2 hrs.
The text-book used is Brockelmann's *Syrische Grammatik.*
Those who intend to make a thorough study of the New Testament or of early Church history will find this course valuable.
- 15 *The Old Syriac Gospels.* 2 hrs. 1st half-year.
The reading of a considerable portion of The Lewis Palimpsest (*The Four Gospels in Syriac*; Cambridge, 1894), with attention to both linguistic and critical phenomena. Students who have taken course 14, or its equivalent, will be qualified to enter this course.
Omitted in 1903-1904.]
- 16 *Syriac Prose of the Classical Period.* 2 hrs. 1st half-year.
Portions of *The Chronicle of Joshua the Stylite* (Wright's edition) will be read. Nöldeke's *Syrische Grammatik* should be in the hands of the student.

- [17] *Biblical and Palestinian Aramaic.* 2 hrs. 2d half-year.

Reading of the Aramaic portions of Daniel and Ezra, with especial attention to the language in which they are written. Marti's *Grammatik der Biblisch-Aramäischen Sprache* will be used as the text-book. If time permits, other specimens of early Palestinian Aramaic will be read, using Dalman's *Aramäische Dialektproben*, or Merx's *Chrestomathia Targumica*. Dalman's *Grammatik des Jüdisch-Palästinischen Aramäisch* will be referred to.

Omitted in 1903-1904.]

- 18 *Babylonian and Assyrian Historical Texts.*

2 hrs. 2d half-year.

For the work of 1903-1904, inscriptions throwing light on the history of Syria and Palestine will be chosen. Some texts will be read in the cuneiform, others in transliteration, according to the needs of the class.

- 19 *North Semitic Inscriptions.* 2 hrs. 1st half-year.

The Moabite stone; the Siloam inscription; the Zenjirli monuments, and other Old Aramaic remains; selected Phoenician and Palmyrene inscriptions; coins with Old Semitic legends. The aim of the course is to acquaint the student with some of the monuments which are especially important for the study of the Old Testament languages and history, and to provide a brief general introduction to North-Semitic epigraphy.

- [20] *Sabaeen and Minaean Inscriptions.* 1 hr. 1st half-year.

At least an elementary knowledge of Arabic is required for this course. Some knowledge of Ethiopic is very desirable, but not necessary.

Omitted in 1903-1904.]

- 21 *Elementary Ethiopic.* 2 hrs. 2d half-year.

The elements of Ethiopic, using Praetorius's *Äthiopische Grammatik* and Bachmann's *Lesestücke*.

- 22 *Advanced Ethiopic.* 1 hr. 1st half-year.

Reading of the *History of the Martyrs of Nagrân* (Pereira's edition of 1899). If preferred, selections from the *Book of Enoch* (ed. Flemming, 1902) will be read.

Dr. PATTON :—

- [23 *Elementary Syriac.* 2 hrs.

The principles of the language, with reading of selections in Brockelmann's *Syrische Grammatik*.

Omitted in 1903-1904.]

- [24 *Elementary Assyrian.* 2 hrs.

The aim of the course is to give the student a good introduction to the Assyrian language and literature. Especial attention will be given to practice in reading both cuneiform and transliterated texts. The text-books used will be Lyon's *Assyrian Manual*, 2d edition, and Delitzsch's *Lesestücke*, 4th edition, 1900.

Omitted in 1903-1904.]

- 25 *Assyrian Literature.* 2 hrs.

Rapid reading of the standard historical and religious inscriptions on the basis of the transliterated text.

- 26 *The Social Life of the Arabs.* 1 hr.

Investigation of the institutions and usages of Arab society, with special comparative references to similar institutions and usages among the ancient Hebrews.

SEMITIC PHILOLOGY AND ARCHAEOLOGY

Professor TORREY :—

- *27 *General Introduction to Semitic Philology.* 1 hr.

A general view of the Semitic languages and peoples, including a brief survey of their literatures. No previous knowledge of the Semitic languages is required for this course, though some acquaintance with at least the Hebrew language is desirable.

[Monday, 2.00 P. M.]

- [28 *Studies in Semitic Art and Archaeology.* 1 hr.

Informal conferences, supplemented by private reading. The aim of the course is to acquaint the student with the most characteristic Old Semitic monuments, and their symbolism, and to give the basis for an estimate of the value and significance of the Semite's contribution to the art of the ancient world.

Omitted in 1903-1904.]

29 *Semitic Seminary.*

1 hr.

Applicants for membership must be well advanced in at least one of the three languages, Hebrew, Syriac, and Arabic, and must have had at least an elementary course in each of the others. Some knowledge of Ethiopic and Assyrian, especially the latter, is desirable, though not indispensable.

The work of the year 1903-04 will consist of investigations in the field of comparative Semitic grammar. Students who have made considerable progress in Arabic will have an opportunity to make use of some of the manuscripts in the Jesup and Salisbury collections.

Professor KENT :—

[30 *The Discovery and Decipherment of Ancient Inscriptions.*

1 hr.

A view of the history of excavations in ancient Assyria, Babylonia, Syria, and Egypt, with a study of the problems and methods of the modern excavator. A survey of the different forms and types of Semitic and Egyptian inscriptions and the history of their decipherment.

Omitted in 1903-1904.]

BIBLICAL LITERATURE

Professor CURTIS :—

31 *Ancient Traditions and History of the Jewish People.* 1 hr.

Studies in history and archaeology with the view of determining the meaning and historical value of the Biblical records.

32 *Analysis and Exposition of Isaiah, Jeremiah, and Ezekiel.*
(English Bible.) 2 hrs. 2d term.

[33 *Analysis and Exposition of the Twelve Minor Prophets.*
(English Bible.) 2 hrs. 2d term.
Omitted in 1903-1904.]

34 *Old Testament Introduction.* 1 hr.

A brief survey of the history of the canon, text, and versions, followed by special introduction to the Hexateuch and remaining Old Testament books. Lectures.

- 35 *Problems of Hexateuchal Criticism.* 1 hr. 2d term.
A consideration of the problems of Hexateuchal criticism.

Professor PORTER :—

- 36 *Theology of the Pre-exilic Prophets.* 2 hrs. 1st term.

A course of lectures on the religious and ethical conceptions of Amos, Hosea, Micah, Isaiah and Jeremiah, based on a critical use of the books that bear their names, and aiming to set forth their individuality and their significance in the history of religion.

- 37 *Theology of Judaism.* 2 hrs. 2d term.

Lectures on the religious history of the Jews from the Exile to the rise of Christianity. The prophets during and after the Exile, the establishment of the religion of the Law, the religious conceptions of the Psalms, the views and problems of the wisdom literature, of late history and story, and of the apocalypses, will be considered. The effort will then be made to trace in outline the history of some important doctrinal conceptions in the Old Testament.

- 38 *Biblical Theology of the New Testament.* 3 hrs.

The central aim of the course is the right understanding and estimation of the Teaching of Jesus. This is studied on the basis of a critical comparison of the Gospels, and with reference to Old Testament and contemporaneous Jewish thought. The Apostolic Teaching is then studied, the common faith of primitive Christianity, the distinctive character and influence of the thought of Paul, and the influences and movements of the early post-Apostolic age.

- 39 *Jewish History.* 1 hr.

The reading of Schürer's *History of the Jewish People in the Time of Jesus Christ*. The work will be read in English, but notice will be taken of additions in the 3d German edition.

- 40 *Philo.* 1 hr.

The reading of Philo's *de opificio mundi* in Greek. The course is meant to be introductory to the study of the religion and ethics of Philo and the Alexandrian school.

Professor BACON :—

- *41 *The Pauline Epistles.* 3 hrs. 1st term.
Grammatico-historical exegesis of Galatians with a comparison of the Pauline system.
- *42 *The Christological Epistles.* 1 hr. 1st term.
A study of the origin and nature of the Christology of Paul in Ephesians with a comparison of Colossians, Philemon, and Philippians. Lecture course, the class preparing theses.
- *43 *Synoptic Gospels.* 3 hrs. 2d term.
Historico-critical exegesis of the gospel of Mark with a comparison of the synoptic tradition. Critiques prepared by the class.
- *44 *New Testament Encyclopedia.* 1 hr. 2d term.
Lectures on the philological and historical apparatus for New Testament exegesis, textual criticism and history of the New Testament Canon.
- 45 *The Book of Acts.* 2 hrs. 2d term
Critical reading of the Book of Acts with application of the principles of historical and documentary criticism. Seminar methods.
- 46 *The History of New Testament Literature.* 2 hrs. 1st term.
Lectures by way of special introduction to the several New Testament books. Critiques prepared by the class.
- 47 *The Catholic Epistles.* 2 hrs.
Discussion of problems of criticism and exegesis. During the first term the first epistle of Peter will be read; during the second term the epistles of James, Jude, and second Peter. Alternates with 48.
- 48 *The Johannine Literature.* 2 hrs.
A critical study of the origins of the Fourth Gospel and the Johannine epistles. Research into the type of thought represented, the sources and character of the evangelic tradition followed and the types of doctrine antagonized. Seminar method. Alternates with 47.

- 49 *Problems of Textual Criticism.* 1 hr. 2d term.

A critical comparison of the Alexandrian with the Western form of the text, aiming to exhibit the history of the principal variants and beginning with the Lucan writings. *Seminar method*, with use of Von Soden's *Die Schriften des Neuen Testaments*, 1902-1903.

Professor SANDERS :—

- 50 *Jewish and Christian Laws and Institutions.*

2 hrs. 2d half-year.

A course continuing course 55. A corresponding study of the laws and institutions of later Judaism and Christianity, and of their historic relationship to each other and to the systems which antedated and influenced them.

- [*51 *Hebrew Wisdom Literature.* 2 hrs. 2d half-year.

An investigation (on the basis of the English translation) of the forms of Hebrew reflective literature and a comparison with the similar literature of other nations. The course will include an interpretation both of the biblical books of Proverbs, Ecclesiastes, and Job, and of the apocryphal books of Ecclesiasticus and the Wisdom of Solomon, and a consideration, both of the wisdom writers as a class and of the importance of this literature in the history of religious thought.

Omitted in 1903-1904.]

- *52 *The English Bible.* 2 hrs. 2d half-year.

The history of the gradual growth of the English Bible from its earliest beginnings to the American Revision of 1900. This will include a discussion of the history of the collection and arrangement of the Biblical books and of the various versions which influenced the English version. Upon these results will be based an investigation of the best methods of interpreting and teaching each department of Biblical Literature.

Professor TORREY :—

- 53 *The Greek Old Testament.* 2 hrs. 2d half-year.

A careful reading of the First Book of Maccabees, using Swete's text (*The Old Testament in Greek*, vol. iii.).

This course aims to introduce the student to the literary and historical problems which center around this book, as well

to familiarize him with an important type of Hellenistic Greek. It is open to those who have at least an elementary knowledge of Hebrew.

Compare the course in the Greek of the New Testament, offered by Professor Seymour, IV, 18 (page 73).

Professor KENT :—

*54 *Biblical Literature and History.* 3 hrs.

A general course intended for students who wish to gain a definite, systematic knowledge of the literature of the Bible on the basis of the best English translations, and to become acquainted with the significant political, social and religious facts and institutions which constitute its historical background.

Text-books, supplemented by lectures and syllabi, giving detailed references to the standard literature on each subject.

55 *Israelitish Laws and Institutions.* 2 hrs. 1st half-year.

A systematic codification and interpretation of the laws found in the Old Testament. With this classification as a basis, the origin, development, and significance of the social, political, and religious institutions of the Israelites are studied and compared with those of other ancient Semitic peoples.

[56 *Hebrew Poetic Literature.* 2 hrs. 1st half-year.

Investigation (on the basis of the English translation) of the characteristics of Hebrew poetry, classification of the different types found in the Bible, comparison with the examples of Semitic poetry, and a careful study of the relation of literary form to interpretation. Special attention will be given to the origin, structure and interpretation of the Psalter.

Omitted in 1903-1904.]

57 *Biblical Seminary.* 2 hrs.

A course intended to train students for patient, accurate and independent investigation of Biblical and cognate questions. It is open only to those who have a general acquaintance with the field of Biblical history and literature.

During 1903-1904 the origin, date, analysis and value of the Old Testament and apocryphal historical writings will be critically studied.

Professor KENT and Mr. LENT :—

*58 *Historical Origin of Christianity.* 1 hr.

A course of lectures, supplemented by discussions and papers, on the growth of Judaism, the conditions in the Graceo-Roman world at the beginning of the Christian era, the nature of the historical sources regarding the beginning of Christianity, the life, methods, and work of its Founder, and the factors which contributed to its development and extension.

Mr. LENT :—

*59 *The Life and Epistles of Paul.* 2 hrs. 1st half-year.

A study of the life and Epistles of Paul and of the principal Pauline epistles.

[*60 *Studies in the Gospels.* 1 hr.

A survey of the characteristics of the Gospels which throw light on their origin and interpretation, with a constructive study of the life and teachings of Jesus.

Omitted in 1903-1904.]

IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY

TRACY PECK, LL.D.	HENRY P. WRIGHT, Ph.D., LL.D.
BERNADOTTE PERRIN, Ph.D., LL.D.	THOMAS D. SEYMOUR, LL.D.
EDWARD P. MORRIS, M.A.	HENRY R. LANG, Ph.D.
THOMAS D. GOODELL, Ph.D.	E. WASHBURN HOPKINS, Ph.D.
HORATIO M. REYNOLDS, M.A.	HANNS OERTEL, Ph.D.
CHARLES C. TORREY, Ph.D.	JAMES W. D. INGERSOLL, Ph.D.
CECIL K. BANCROFT, B.A.	CHARLES H. WELLER, B.A.
PAUL V. C. BAUR, Ph.D.	CHARLES U. CLARK, B.A.
SAMUEL E. BASSETT, B.A.	

Students in this department have at all hours unrestricted use of the departmental library. This is in Phelps Hall, near the Classical seminary rooms, in a large and well lighted apartment amply supplied with tables and private lockers. It now contains more than three thousand volumes, and additions are made each year, so that the student finds here practically everything needed for ordinary work in the courses in classical philology, except some periodicals and expensive illustrated works, which are easily accessible in the University library.

Special purchases of books will be made for students who are carrying on an investigation, either in connection with their thesis or otherwise.

The CLASSICAL CLUB, consisting of the instructors and students in the department, meets in the library room every Saturday evening, to hear reports and papers in the field of classical philology, or to read and discuss the work of some Greek or Latin author. During the year 1903-1904 the club will read from von Wilamowitz-Moellendorff's *Griechisches Lesebuch* and the Latin Elegiac poets.

Graduate students of this University who are approved by the classical instructors are admitted without charge to the American Schools of Classical Studies at Athens and in Rome.

Attention is called to the following allied courses in other departments:

In Ancient Philosophy : Courses I, 38 (Ancient Philosophy); 41 (Plato's Dialogues); 43 (Pre-Socratic Philosophy); 44 (Aristotle's Metaphysics).

In the History of Philology : II, 53 (The Renaissance and the Reformation); V, 25 (Petrarch and Boccaccio).

Of the following courses those bracketed will be omitted in 1903-1904, but are likely to be offered the next year.

1 *Classical Seminary.* 2 or 3 hrs.

The members are expected to read French and German freely and to have read widely in Greek and Roman literature.

Professor PECK :—

(a) *The Annals of Ennius.* 1st half-year.

Minute study of the remnants of the poem. Influence of Ennius on the Latin language and literature.

Members of the Seminary should provide themselves with Baehrens' *Fragmenta Poetarum Romanorum* (Teubner).

[Monday, 10.30 A. M.—12.30 P. M., 21 Phelps Hall.]

Professor PERRIN :—

(b) *Herodotus.* 2d half-year.

The critical study of books vii-ix as historical source for the invasion of Xerxes.

Students who intend to take this course should read as much of Herodotus as possible in preparation, especially books iv-vi in Macan's edition (Macmillan, 1895), and Hauvette's *Hérodote*, Paris, 1894. The work of the course will consist largely in an application of Macan's principles and methods of editing to books vii-ix.

[Wednesday, 8.30-10.30 A. M., 23 Phelps Hall.]

GREEK

Professor SEYMOUR :—

2 *Epic Poetry.* 3 hrs.

Introduction to the critical study of Homer. Lectures on the history of Homeric study, Epic poetry, the composition and transmission of the poems, life in the Homeric times in its various aspects ; Homeric language and verse. These are followed by a familiar but critical interpretation (and exercises in interpretation and criticism) of portions of the *Odyssey*, and of the later Greek epics.

[Monday, 3.00-4.30, and Wednesday, 4.30-6.00 P. M., 23 Phelps Hall.]

[3 *The Greek Orators.* 3 hrs.

A study of Greek Oratory, beginning with the orations of Isaeus, and including some of the private orations of Demosthenes, with reference to Athenian life and law, as well as to the development of Attic eloquence.

Omitted in 1903-1904.]

4 *Plato.* 3 hrs.

The *Republic*, and portions of the other dialogues which are most important for its elucidation.

[Monday and Thursday, 8.30 A. M., 23 Phelps Hall.]

[5 *The Greek Bucolic Poets.* 1 hr.

The idyls of Theocritus, Bion, and Moschus, with a comparison of bucolic poetry in other literature.

Omitted in 1903-1904.]

Professor GOODELL :—

[6 *Sophocles.* 3 hrs.

Reading of the seven extant plays with special attention to the artistic form, including style, treatment of the myths, management of the action, use of meters, and the like.

Omitted in 1903-1904.]

7 *Euripides.* 3 hrs.

Rapid reading of the nineteen plays.

8 *Advanced Greek Composition.* 2 hrs.

Exercises in translation and free composition, both previously prepared and extemporaneous.

Professor REYNOLDS :—

9 *Aristotle's Poetics. Literary Criticism in Ancient Times.*

1 hr.

Interpretation of the *Poetics* and parts of the *Rhetoric*, with selections from Plutarch, Pseudo-Longinus, and Lucian, with topical study of Aristotle's influence on literature and art.

10 *Late Greek Poetry.*

1 hr.

This course includes a survey of Alexandrian and later Greek poetry. Reading of the mimes of Herondas, with selections from the Anthology, and from the hymns of Callimachus, and other fugitive poetry.

Professor OERTEL :—

[11 *Greek Dialects, and Comparative Grammar of Greek Sounds and Inflection.* 2 hrs.

Selected inscriptions of each dialect will be read and interpreted. Cauer's *Delectus Inscriptionum Graecarum propter dialectum memorabilium* (Lipsiae, 1883) contains most of the inscriptions to be read and should be in the hands of students. The rest of the time will be devoted to an exposition of the history of Greek sounds and inflections. For this an elementary knowledge of Sanskrit is desirable. Students should provide themselves with Brugmann's *Griechische Grammatik* (3d edition, München, 1900 ; forming the first half of vol. ii of Iwan Müller's *Handbuch der klassischen Altertumswissenschaft*).

The course of twelve lectures (Course 60, on *Indo-European Phonology*) will serve as an introduction to this. The instructor reserves the privilege of extending this course to three hours a week.

Omitted in 1903-1904.]

Professor TORREY :—

12 *Old Testament in Greek.*

[See courses in Biblical literature.]

Mr. WELLER :—

13 *Xenophon.*

An introduction to Xenophon. A brief survey of Xenophon's writings and the critical reading of parts of the *Anabasis*. Study of special topics such as the Life of Xenophon, his style and diction, the route of "the ten thousand," Greek military equipment and tactics. Students should have the complete Teubner text of Xenophon's works, including Gemoll's editio maior of the *Anabasis*.

Mr. BASSETT :—

14 *Modern Greek.*

1 hr.

A practical introduction to the subject, using A. Thumb's *Handbuch der neugriechischen Volkssprache*. Particular attention is given to the colloquial language.

[14a *Greek Epigraphy.*

2 hrs.

a. The local alphabets, and the more important inscriptions written in them.

b. Attic inscriptions, selected for their historical or antiquarian interest.

Omitted in 1904-1905.]

Professor PERRIN :—

*15 *The Testimonies of Aristophanes, Thucydides, and Plutarch to the Career of Pericles* (after B I). 2 hrs.

A study of literary forms (Old Athenian Comedy; History; Biography) and historical tradition.

The *Acharnians* of Aristophanes will be read entire, as well as other testimonies of Old Athenian Comedy to the career and influence of Pericles; those portions of Thucydides also (especially the first and second books) which bear on the same subject; and finally the biography of Pericles by Plutarch. The estimates of Pericles by the leading modern historians will also be examined.

[Tuesday and Thursday, 10.30 A. M., 9 Phelps Hall.]

Professor SEYMOUR :—

- *16 *Aeschylus and Pindar.* 2 hrs.

The *Prometheus* and the *Agamemnon* of Aeschylus are read with special attention to the dramatic structure of the two plays. In the latter part of the year the principal extant odes of Pindar are read, and a brief sketch of Greek lyric poetry is given.

[Monday and Friday, 5.00 P. M.]

- [*17 *Plato and Aristotle.* 2 hrs.

The *Phaedo* of Plato and the *Nicomachean Ethics* of Aristotle.

Omitted in 1903-1904.]

- *18 *Greek Testament.* 2 hrs.

A philological study of St. Paul's Epistles to the Corinthians and Galatians, and the chief characteristics of the Hellenistic diction.

[Tuesday and Thursday, 3.00 P. M.]

Professor REYNOLDS :—

- *19 *Homer.* 2 hrs.

Reading of the entire *Odyssey*. The course is intended for the general student of literature.

[Monday and Friday, 10.30 A. M., 14 Phelps Hall.]

- [*20 *Euripides.* 2 hrs.

A reading-course with reference to Euripides' poetic and dramatic quality. Five or six plays will be read. Discussion of the poet's relation to his own times, style, metres, dramatic innovations, and influence on the Roman and modern dramatists, with occasional lectures.

Omitted in 1903-1904.]

- *20a *Plato.* 2 hrs.

The *Charmides* and *Lysis* are read entire, with Purves' Selections from Plato, chiefly with reference to Plato's literary style and the form of the dialogue.

[Tuesday and Thursday, 10.30 P. M., 14 Phelps Hall.]

- [*21 *Lucian.* 2 hrs.

A general reading-course in prose, with discussion of the life and times of Lucian and of his influence upon modern literature. The *Dream*, *Charon*, *Timon*, *Angler* and *True History* will be read, with many minor pieces, including the *Dialogues of the Gods* and *Dialogues of the Dead*.

Omitted in 1903-1904.]

Mr. BASSETT :—

- *22 *Greek Composition and Sight Reading.* 2 hrs.

Exercises in composition and in translation at sight of selections from Xenophon. The course is designed especially for those who intend to teach.

[Tuesday and Thursday, 2.00 P. M.,]

LATIN

LATIN LITERATURE

Professor PECK :—

- 23 *The Letters of Pliny and the Dialogus de Oratoribus of Tacitus.* 2 hrs.

[Saturday, 9 30–11.20 A. M.]

- [24 *The Epistles of Horace and the Satires of Persius.* 2 hrs.

Omitted in 1903–1904.]

- [25 *Lucretius.* 2 hrs.

Omitted in 1903–1904.]

Professor MORRIS :—

- 26 *Plautus.* 4 hrs. in two sessions, in the 1st half-year.

Lectures introductory to the study of Plautus, followed by a critical study of the *Bacchides*. Students should have the complete Teubner text (Goetz-Schoell).

- [27 *Terence.* 2 hrs.

The six plays will be read with special reference to the social life represented and the dramatic structure. Dziatzko's text (Tauchnitz) and Hayley's *Introduction to the Verse of Terence* will be used.

Omitted in 1903–1904.]

- *28 *Cicero.* 2 hrs.

Rapid reading of a number of the Orations of Cicero, sometimes translating, more often reading in Latin.

For graduates and advanced undergraduates.

[Wednesday and Friday, 10.30 A. M.]

Professor OERTEL :—

29 *Selections from Latin Authors on the Latin Language.*

2 hrs.

Reading and interpretation of selected passages from Varro, Cicero, Caesar, Quintilian, Aulus Gellius, possibly also from Festus and some grammarians in Keil's collection which bear on questions of Latin grammar. The first author read will be Gellius. The Teubner edition by Hertz (editio *minor altera*, 2 vols., 1886) should be in the hands of the students at the beginning of the course.

Assistant Professor INGERSOLL :—

[30 *Latin Comedy.*

2 hrs.

A dozen plays of Plautus, three or four of Terence, and the principal fragments of the other Comic Writers. A course in rapid reading, designed to supplement the critical work on Plautus in other courses.

Omitted in 1903-1904.]

Professor PECK :—

[*31 *Lucretius and Horace.*

2 hrs.

The Epistles of Horace, including the *Art of Poetry*.

Omitted in 1903-1904.]

*32 *The Character and Reign of Tiberius.*

Tacitus (*Annals*, i-vi), Suetonius (*Tiberius*), and Velleius Paterculus. The characteristics of "Silver" Latin.

[Tuesday and Thursday, 10.30 A. M.]

[*33 *Roman Oratory.*

2 hrs.

Cicero (*Brutus*), Quintilian (*x* and *xii*), and Tacitus (*Dialogus*).

Omitted in 1903-1904.]

Professor MORRIS :—

*34 *Vergil.*

2 hrs.

An introduction to Vergil, intended to give students who may expect to teach Latin an acquaintance with the best editions and commentaries and with works on special topics.

Wednesday and Friday, 11.30 A. M.]

Professors H. P. WRIGHT and INGERSOLL :—

- [*35 *Latin Satire, Epigram, and Comedy.* 2 hrs.

Selections from Juvenal and Martial, with special reference to a study of the private life of the Romans.

Plautus—three or four plays, with study of literary history, form, and influence.

Omitted in 1903-1904.]

- *36 *Latin Lyric and Elegiac Poetry.* 2 hrs.

Horace, Tibullus, Propertius, Latin Hymns.

[Tuesday and Thursday, 9.30 A. M., 11 Phelps Hall.]

Assistant Professor INGERSOLL :—

- *37 *Latin Literature.* 2 hrs.

A general survey of the whole field, aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, both as to form and as to subject, and to characterize the several periods of the literature in the light of the changing conditions under which the development took place. Lectures, illustrative readings, and direction of the student's private reading. The course is designed especially for those who wish to take their bearings in preparation for special work in this department, and for those who, while their chief interest lies in other departments of study, desire to get a general notion of the range and leading characteristics of a literature in which their previous reading has been more or less desultory.

[Monday and Friday, 9.30 A. M., 12 Phelps Hall.]

Mr. BANCROFT :—

- *38 *The Fasti of Ovid.* 2 hrs.

With special reference to Roman religion.

[Monday and Friday, 2.00 P. M., 19 Phelps Hall.]

THE LATIN LANGUAGE

Professor PECK :—

*39 *Early Latin.* 2 hrs.

Study of inscriptions and of the ante-classical literature, based on Allen's *Remnants of Early Latin*, Merry's *Fragments* and Smith's *Selections*.

The course is largely philological and critical, dealing with the development of forms, constructions and literature, and it is especially commended to those who expect to teach Latin.

[Wednesday, 9.30 to 11.20 A. M.]

Professor OERTEL :—

40 *The Italic Dialects and Comparative Grammar of Latin Sounds and Inflection.* 4 hrs. in two sessions in 2d half-year.

After a brief survey of the peoples and languages of ancient Italy, a few of the more important Oscan and Umbrian inscriptions are read and interpreted. Students should be provided either with v. Planta's *Grammatik der Oskisch-umbrischen Dialekte* (2 vols., 1892-97) or with Conway's *The Italic Dialects* (2 vols., 1897). The rest of the time will be devoted to an exposition of the history of Latin sounds and inflections in the light of comparative grammar. Either Lindsay's *The Latin Language* (Oxford, 1894) or Stolz-Schmalz' *Lateinische Grammatik* (3d ed., 1900, being the second half of vol. II of Iwan Müller's *Handbuch der klassischen Altertumswissenschaft*) should be in the hands of the student. [For those who intend to take a course in Latin syntax (course 41) the latter book is preferable.] An elementary knowledge of Sanskrit is desirable.

The course of twelve lectures (60), on *Indo-European Phonology* will serve as an introduction to this course.

Professor MORRIS :—

[41 *Latin Syntax.* 2 hrs.

Introductory lectures on the history of syntactical study and on the principles and methods of investigation; discussion of syntactical systems in grammars and text-books; a study of the forms and functions of the *qui*-clause.

One session weekly of two hours in length, which may be extended to three hours.

Omitted in 1903-1904.]

Professor OERTEL :—

*42 *Practice in Writing Latin Prose (Advanced course).*

2 hrs.

A study of Cicero's *Laelius* from the stylistic point of view. M. Seyffert's edition (2d ed. revised by C. F. W. Müller, Leipzig, 1876) is recommended. Exercises in translation and free composition. Students should provide themselves with H. Menge's *Repetitorium der Lateinischen Syntax und Stylistik* (7th ed., 1900) and his *Kurzgefasste Synonymik* (4th ed.).

Mr. CLARK :—

*43 *Latin Composition.*

2 hrs.

This course is designed for undergraduates who plan to teach the Classics. It is sufficiently exhaustive to serve as final for men wishing to go into teaching immediately after graduation ; but it is subsidiary to course 42, which should be taken as its complement. Text-book work will be supplemented by original composition and conversation.

[Monday and Friday, 3.00 P. M.]

COURSES IN SPECIAL SUBJECTS.

Professor LANG :—

44 *Low Latin.*

1 hr.

The aim of this course is to give an historical account of the popular speech of Rome and of the Roman provinces, and also an outline of its grammar and syntax, as it is disclosed to us by classical Latin, the testimony of the Latin grammarians, inscriptions, medieval documents, and the consensus of the Romance languages.

The course is taken up with lectures on the history and the grammar of Low Latin and the reading of a Low Latin text. For the present the following is used: P. Geyer, *Itinera hierosolymitana saeculi iii-viii* (vol. 39 of *Corpus Scriptorum Ecclesiasticorum Latinorum*), Vienna, 1898. Students should come provided at the beginning with E. Gorra's *Lingue neolatine* (Milano, Hoepli, 1894). Students who wish to take this course must have a good training in Greek and Latin, and at least a reading knowledge of French or Italian.

[Tuesday, 8.30 A. M., K. O.]

Assistant Professor INGERSOLL :—

[*45 *Roman Law.* 2 hrs.

An elementary and general course, for the classical student or the student of law.

Omitted in 1903-1904.]

Mr. CLARK :—

46 *Introduction to Text Criticism.* 2 hrs.

Reconstruction of the text of Ammianus Marcellinus in the light of Wilhelm Meyer's Law and on the basis of new collations. Students will provide themselves with either Eyssenhardt's (Berlin, 1871) or Gardthausen's (Berlin, 1875) edition.

*47 *Latin Palaeography.* 2 hrs.

Facility in reading and dating MSS. is acquired by systematic study of the rich University collection of facsimiles. The origin and the bearing upon text criticism of MS. errors are constantly observed. The development of late Latin and Medieval literatures is taken up in detail.

CLASSICAL ARCHAEOLOGY

Dr. BAUR :—

[*48 *Greek Art—I. Sculpture.* 2 hrs.

Lectures and quizzes by the instructor. Special study of the literary sources by the students.

Omitted in 1903-1904.]

*49 *Greek Art—II. The Lesser Arts.* 2 hrs.

This course will treat briefly the subjects of Greek painting, ceramics, terra-cottas, bronzes and other metal work, coins and gems.

50 *Greek Architecture.* 2 hrs.

The various forms of building-construction will be successively examined in informal lectures, supplemented by occasional reports from members of the class.

- 51 *Topography and Monuments of Athens.* 2 hrs.

A combination of the historical and the strictly topographical methods of treatment will be adopted. Those who intend to take this course should provide themselves with the Teubner text of *Pausanias*.

- 52 *Archaeological Exercises.* 2 hrs.

Exercises in the interpretation of archaeological monuments, as illustrating classic life and literature. The monuments will be selected largely with reference to the courses offered in Greek and Latin authors. No preparation is required.

- *53 *Roman and Etruscan Art.* 2 hrs.

This course will include such subjects as Roman architecture, Graeco-Roman sculpture, topography and monuments of Rome and of Pompeii; the domestic arts, such as household utensils, glass, coins, frescoes, mosaics, textiles, terra-cottas. Select topics will be investigated by the members of the class.

INDO-IRANIAN PHILOLOGY

Professor HOPKINS:—

- *54 *Elementary Sanskrit.* 2 hrs.

Instruction in Sanskrit, beginning with Whitney's *Sanskrit Grammar*, and passing on to Lanman's *Reader*.

The elementary course in Sanskrit is designed especially for classical students, but it may be taken with profit by students of German or English, especially by those who intend to become teachers, and it is indispensable for those who pursue studies in the comparative grammar of Greek and Latin. The course is continued through the year, the first term being devoted mainly to the grammar, the second to interpretation. By the end of the year the student will have read portions of the classical and Vedic selections in Lanman's *Reader*, and be fitted to pursue the work of the advanced course in the following year. On the other hand, he will have attained such familiar acquaintance with Sanskrit grammatical forms and syntactical structure, as greatly to aid his comprehension of parallel phenomena in other Aryan languages.

[Tuesday and Thursday, 3.00 P. M.]

55 *Advanced Sanskrit.* 2 hrs.

Selections from the Rig-Veda and Brahmanic texts.

This course is intended for those that have had already at least one year's instruction in Sanskrit. It is addressed particularly to students of literature, social institutions, and religion. The first half of the year will be occupied with reading selections from the Vedic Hymns, which are not only a priceless heirloom of early religious thought, but also a mine of information in regard to early institutions. The special topic of the second term's reading will be the philosophical portions of the first Brahmanic works and Upanishads, the earliest Aryan prose.

[Tuesday and Thursday, 4.00 P. M.]

56 *History of Sanskrit Literature.* 2 hrs.

This course consists in a review of Vedic and classical Sanskrit literature from the earliest times to the Puranic period, with extracts to illustrate the various phases of literary development. As it is expected that those who take this course will ordinarily have some knowledge of Sanskrit, the translation is made with reference to these students especially, and they are provided as far as possible with the original texts, as read from day to day. In this way this course forms also a reading-exercise parallel to that in Advanced Sanskrit.

[Wednesday, 3.00 P. M.]

57 *Pali Language and Literature.* 1 hr.

Intended for those who desire to begin the study of Buddhistic scriptures. Pali is easy for advanced Sanskrit students, and offers much of interest in respect of literature and religion.

58 *Comparative Religion.* 1 hr.

A course of twelve lectures throughout the year. These lectures are in two parts. The first part takes up the study of religion from the comparative point of view, treating of the underlying principles of religion as shown in the religious phenomena of different nations and races, from lower to higher forms of religious expression. The second part consists of lectures on special religions, illustrating the principles explained in the first part. They are open to all Graduate students, members of the Divinity School, and of the Junior and Senior classes of the College.

COMPARATIVE GRAMMAR, PHONETICS, AND LINGUISTICS

Professor HOPKINS :—

*59 *Introduction to Comparative Syntax.* 1 hr.

This course consists in an analysis of the syntactical facts presented by the Aryan languages, particularly Sanskrit, Greek, Latin, and early German. It is intended especially for students of these languages who desire a more thorough acquaintance with the problems of comparative syntax. To solve these problems a knowledge, if not of the Sanskrit language, at least of Sanskrit syntactical phenomena is necessary, and the lectures are accordingly planned with a view to explain these phenomena to those who have not studied Sanskrit as well as to those who have done so.

[Monday, 3.00 P. M.]

Professor OERTEL :—

60 *Twelve Lectures on Indo-European Phonology.*

These lectures are intended to present in rough outlines the most important facts of Indo-European phonology (viz: the vowel-system, strengthening and weakening, ablaut, the gutturals, and accent) and to introduce the student to the more important literature on these subjects. The lectures are mainly intended for those who are taking courses in historical grammar of either the classical or the modern languages. They should be supplemented by collateral reading in Bechtel's *Hauptprobleme der indogermanischen Lautlehre* (1892), and Hirt's *Der indogermanische Akzent* (1895) and *Der indogermanische Ablaut* (1900).

61 *Phonetics.* 1 hr.

A general introduction to Phonetics based on a study of the English, French, and German sound-systems. The course is intended to furnish a basis both for the study of the phonology and for the practical teaching of the various languages. Sweet's *Primer of Phonetics* (1890), Viëtor's *Elemente der Phonetik* (3d ed., 1898) and Sievers' *Grundzüge der Phonetik* (4th ed., 1893) should be in the hands of the student. Storm's *Englische Philologie* (2d ed., 1896), Bremer's *Deutsche Phonetik* (1893), Laura Soames's *Introduction to Phonetics* (ed. by Viëtor, 1900).

Passy's *Les Sons du Français* (4th ed., 1897) and Rousselot's *Les Modifications phonétiques* (1891) will be constantly referred to for collateral reading.

Attention is called to the practical exercises in French pronunciation given by Mr. Clarke (V, 12).

62 *Linguistics.*

2 hrs.

An introduction to the scientific study of linguistic development. The course, which is general in its character, is intended for all students, of the classics as well as of the modern languages, who wish to become acquainted with the general principles and chief problems of linguistic science, modern methods of research, the tendencies of recent investigations, the nature of linguistic phenomena, etc. After briefly discussing the topics treated in the instructor's *Lectures on the Study of Language* (New York, Scribner's Sons, 1901), the more important types of language-structure, together with the fundamental facts of syntax and the problem of the origin and rise of language, will be taken up. In connection with this, selected chapters of Paul's *Principien der Sprachgeschichte*, 3d ed., 1898, and of Wundt's *Völkerpsychologie*, Band I: Die Sprache (2 vols., 1900) will be critically examined. Stress will be laid on the psychological aspect of linguistic phenomena and on familiarizing the student with the more recent literature. No knowledge of Sanskrit is necessary for this course.

V. MODERN LANGUAGES AND LITERATURES

THOMAS R. LOUNSBURY, L.H.D., LL.D.	HENRY A. BEERS, M.A.
ALBERT S. COOK, Ph.D., L.H.D.	HENRY R. LANG, Ph.D.
ARTHUR H. PALMER, M.A.	FRED'K M. WARREN, Ph.D.
GUSTAV GRUENER, Ph.D.	WILBUR L. CROSS, Ph.D.
CHARLTON M. LEWIS, Ph.D.	WILLIAM L. PHELPS, Ph.D.
ROBERT N. CORWIN, Ph.D.	ROBERT L. SANDERSON, M.A.
CHARLES S. BALDWIN, Ph.D.	CHARLES C. CLARKE, Jr., B.A.
KENNETH MCKENZIE, Ph.D.	CLYDE C. GLASCOCK, Ph.D.
WM. O. FARNSWORTH, M.A.	CHARLES G. OSGOOD, Ph.D.
HOLLON A. FARR, M.A.	JOHN C. ADAMS, M.A.
FREDERICK B. LUQUIENS, B.A.	R. K. ROOT, Ph.D.
CHARLES P. WAGNER, Ph.D.	ALBERT E. CURDY, Ph.D.

As auxiliary to the regular courses in modern languages and literatures, four clubs hold regular sessions throughout the year. These are The MODERN LANGUAGE CLUB, The ENGLISH CLUB, The GERMAN JOURNAL CLUB, and The ROMANCE JOURNAL CLUB. The first two in particular aim to deal with subjects not too technical in character, and thus to promote a sense of comity among all the workers in the same field.

The MODERN LANGUAGE CLUB, formed of instructors and students in the departments of English, Romance Languages, and German, holds its regular meetings on the second Saturday evening of each month for the reading and discussion of original papers, and for reports of progress in the field of these studies.

The ENGLISH CLUB, to which are invited all persons, whether members of the University or not, who are interested in the study or teaching of the English language or literature, meets on alternate Monday evenings to listen to the presentation of some topic, and engage in the informal discussion of it. The club never remains in session over an hour, and thus opportunity is afforded for keeping other engagements the same evening.

The GERMAN JOURNAL CLUB has for its object the presentation of reports on the most interesting periodicals published in German, and devoted to the science of Germanic philology.

The ROMANCE JOURNAL CLUB, consisting of the instructors and students in the departments of Romance Languages and Literatures, meets in K, Osborn Hall, every other Saturday morning to report on, and discuss, the results of recent scientific research in this field of study.

The GERMAN SEMINARY ROOM in Fayerweather Hall, where the Journal Club meets, contains a small working library for the use of advanced students in the Germanic languages. It also serves as a general study and working room for such students.

The ENGLISH SEMINARY ROOM, at 135 Elm st., which has lately been enlarged for the better accommodation of graduate students in English, contains the nucleus of a working library. This room is general headquarters for the graduate students in English, and serves for the meetings of the English Club, and for similar purposes.

ROMANCE LANGUAGES

[For Palaeography see Mr. Clark's Course, Classical Philology IV, 47.]

Professor LANG :—

1 *Low Latin.*

[See Classical Philology IV, 44. Omitted 1903-1904.]

FRENCH

2 *Old French.*

2 hrs.

Introduction to the study of Old French language and literature in general, followed by a more especial study of Anglo-Norman. G. Paris's *Extraits de la Chanson de Roland* (7^{me} éd. Paris, 1902), and the same author's *La littérature française au moyen-âge* (Paris, 1888) will be used.

Mr. LUQUIENS :—

3 *General Reading in Old French.* 2 hrs.

This course is intended to supplement course 2. Discussion of the relations of the Old French Literary dialects ; explanation in the class-room of representative texts ; additional outside reading under the direction of the instructor.

The following texts will be used : *Aucassin u. Nicolette* (H. Suchier, 4th ed., Paderborn, 1899) ; *Ivain, Chrétien de Troies* (W. Foerster, Halle) ; *Roman de la Rose ou de Guillaume de Dole* (G. Servois, Société des Anciens Textes Français, 1893).

Dr. CURDY :—

4 *French Dialects.* 1 hr.

The phonology and morphology of the dialects of northern France before the fifteenth century. A discussion of the various theories of the origin and spread of dialects, especially those of the Romance group, and a presentation of the geographical relations of the French dialects will introduce the course. A knowledge of French historical grammar is requisite.

FRENCH LITERATURE

Professor WARREN :—

5 *The Epic of Antiquity and the Romans d'Aventure.* 2 hrs.

Lectures on the medieval French poems of *Thèbes*, *Troie*, *Énéas* and *Alexandre* will introduce the course on the Romans d'Aventure.

6 *The French Drama.* 1 hr.

A discussion of the origin and development of the French stage in medieval and modern times.

Assistant Professor SANDERSON :—

7 *Teacher's Course in French.* 1 hr.

A course for the discussion of topics of interest to teachers of French—questions of syntax, pronunciation, methods of teaching, choice of texts, etc.

*8 *History of French Literature.*

A study of French Literature from the origins to 1900. Only works written in modern French will be read, the matter previous to the seventeenth century being treated in lectures. The course will be conducted in French.

- *9 *Molière.* 1 hr.

A linguistic and literary study of some of Molière's best plays.

The course will be conducted in French.

Monday, 10.30 A. M., E1 O.]

Mr. FARNSWORTH :—

- 10 *Development of Literary Criticism in France.* 1 hr.

A survey of criticism from the Renaissance to the present time. Boileau, Voltaire, Mme. de Staël, Sainte-Beuve, Taine, and others will be studied in their relation to groups. Collateral reading will be required.

PHONETICS

Professor OERTEL :—

- 11 *Phonetics and Linguistics.*

[See Courses IV, 61, 62.]

Assistant Professor CLARKE :—

- 12 *Phonetics of Modern French.* 1 hr.

Lectures, with exercises, on the phonetics of French as it is spoken to-day, based on personal observation, supported by the recent publications of Rousselot and Paul Passy.

Incidentally, attention will be directed to the history of French pronunciation since the fifteenth century, in so far as it serves to explain present peculiarities.

The course is offered to such graduate students and others as can read French fluently and have some knowledge of general phonetics. It will be a practical application of the science, and is intended to be of especial value to teachers and those who are making a serious study of the French language.

This course will be conducted in French when generally desired.

PROVENÇAL

Professor LANG :—

- 13 *Provençal Language and Literature.* 2 hrs.

This course begins with lectures on the historical grammar of old Provençal, after which the origin and growth of Provençal lyric poetry, its style and metre, are studied in connection with

the reading of selections from the works of the Troubadours. Students will provide themselves from the beginning with Appel's *Provenzalische Chrestomathie* (Leipzig, 1901), and Res-tori's *Histoire de la littérature provençale* (Montpellier, 1894).

- 14 *Seminary Course in Romance Languages and Literatures.* 2 hrs.

This course is designed to give competent students opportunity and guidance in original research.

During the coming year, the work in this course will center on the study of the origin and the development of medieval lyric poetry in Provence and France as well as in the other Romance countries.

SPANISH

Professor LANG and Dr. WAGNER :—

- 15 *Spanish (Elementary Course).* 3 hrs.

In this course, stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge of the language. Knapp's *Spanish Grammar* and Alarcón's *El Capitán Veneno* will be used as text-books.

[Monday, Wednesday, Friday, 9.30 A. M., K. O.]

Professor LANG :—

- 16 *Spanish Prose of the Nineteenth Century.* 2 hrs.

The object of this course is to give the student fluency in reading. In addition to the reading done in the class-room, a number of texts will be assigned for private study. The following will be among the works to be read : Perez Galdos, *Doña Perfecta* ; Fernan Caballero, *La Gaviota* ; Alarcón, *El Escudalo* ; Valdés, *La Alegria del Capitan Ribot* ; Coloma, *Pequeñeces* ; Juan Valera, *A Vuela Pluma*. *Artículos literarios y políticos*.

[Tuesday and Thursday, 9.30 A. M., K. O.]

- [*17 *Spanish Prose of the Sixteenth and Seventeenth Centuries.* 2 hrs.

This course is open only to students who have taken course 15. or who shall satisfy the instructor as to their fitness to take it by passing a special examination. *Lazarillo de Tormes*, Cervantes' *Don Quijote* and *Novelas Ejemplares* will be read in class, while other works will be assigned for private study.

Omitted in 1903-1904.]

- *18 *The Spanish Drama of the Sixteenth and Seventeenth Centuries.* 2 hrs.

This course will consist of lectures in connection with the reading in class of selected plays by Lope de Vega, Tirso de Molina, Calderon, etc. Work will be assigned for reports to be made in class. Open to students who have had two years of Spanish or its equivalent.

[Mondays and Fridays, 11.30 A. M.]

Dr. WAGNER :—

- *19 *Reading and Composition in Spanish.* 2 hrs.

This course is designed for those requiring the use of Spanish for commercial purposes. The writing of letters and the reading of commercial papers will be especially considered. Open to students who have taken 14.

[Tuesdays, Thursdays, 10.30 A. M.]

- *20 *General View of Spanish Literature.* 1 hr.

The aim of this course is to give the student an outline of the development of Spanish literature. In addition to lectures and the reading of classical texts in the class-room, outside reading will be required. An extra hour may be given at the option of the instructor. Open to students who have had two years of Spanish or the equivalent.

[Wednesdays, 9.30 A. M.]

- 21 *Beginnings of Spanish Literature.* 1 hr.

This course comprises a study of the early literature of Castile previous to the fifteenth century, and its relations with the literatures of France and Italy. Students will come provided with E. Gorra's *Lingua e letteratura spagnuola delle origini* (Milano, Hoepli, 1898).

Mr. LUQUIENS :—

- 22 *Spanish Lyric Poetry.* 2 hrs.

A course of lectures on the origins and development of Lyric Poetry in Spain, special attention being given to the poets of the fifteenth and sixteenth centuries, and to their relations with the poets of France and Italy. Students will be asked to prepare papers on the various phases of the subject; they should procure Ford's *Anthology* (Silver, Burdett & Co., New York).

ITALIAN

Dr. McKENZIE :—

- *23 *Italian (Elementary Course).* 3 hrs.

This course is open to those who have studied French for at least two years, or who shall otherwise satisfy the instructor of their fitness to take Italian. Stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge.

Grandgent's *Italian Grammar* and *Italian Composition* ; selections from modern authors.

[Tuesday, Thursday, Saturday, 9.30 A. M.]

- *24 *Dante's Life and Works.* 2 hrs.

This is a strictly literary course, open only to those who have passed through course 22, or who shall otherwise satisfy the instructor of their fitness to take it. After some introductory lectures on Italian poetry previous to Dante, and its relations to the literature of Provence and of France, the *Vita Nuova* and selections from the *Divina Commedia* will be read and explained.

Students will provide themselves with Casini's edition of *La Vita Nuova* (2d ediz., Firenze, 1891), Fraticelli's edition of *La Divina Commedia* (Firenze, 1898), and Gardner's *Dante* (Temple Series), 1900.

[Wednesday, Friday, 11.30 A. M.]

- [25 *Petrarch and Boccaccio.* 2 hrs.

A study of the Italian writings of Petrarch and Boccaccio, and their influence on the humanistic movement. Rigutini's *Le Rime di Francesco Petrarca* (Milano, Hoepli, 1896); Fornaciari's *Novelle scelte dal Decamerone di G. Boccaccio* (Firenze, Sansoni, 1889).

Omitted in 1903-1904 ; given in alternate years.]

- 26 *Italian Literature of the Thirteenth Century.* 1 hr.

Reading of texts, with reference both to their literary qualities and to the history of the language. Particular attention will be paid to the early lyric poetry of Italy and its relation to the poetry of Provence.

Monaci's *Crestomazia italiana dei primi secoli* ; Casini, *Forme metriche italiane*.

- [27 *Fable-literature in the Middle Ages.* 1 hr.

Study of the history of Æsopic fables from ancient times to the present, with special reference to the medieval French and Italian collections; the relation between the fables and the beast-epic. Lectures, reading, reports on assigned topics.

Omitted in 1903-1904.]

GERMANIC LANGUAGES

GERMAN

Professor PALMER :—

The following courses, 28, 29 and 30, will be given in 1903-1904, according to circumstances and the needs of the graduate students actually in attendance.

- 28 *Introduction to Germanic Philology.* 2 hrs.

A course introductory to the general study of Germanic philology, dealing with its history, methods, fields, and fundamental facts. The basis of the work is Paul's *Grundriss der Germanischen Philologie*, of which portions are read, discussed, and supplemented by informal lectures.

- 29 *Gothic.* 2 hrs.

An introductory course, especially for those who intend to study German or English historically, in the study of Gothic and its phonological relations to both earlier Indo-Germanic and later Germanic languages. Braune's *Gotische Grammatik* or Streitberg's *Gotisches Elementarbuch*, Heyne's *Ulfilas*, Streitberg's *Urgermanische Grammatik* or Dieter's *Altgermanische Dialekte*, and Henry's *Comparative Grammar of English and German*.

- 30 *Early Dramatic Literature of Germany.* 3 hrs.

Studies in the dramatic literature of the sixteenth and seventeenth centuries in Germany.

- 31 *Philosophical German.* 2 hrs.

In connection with the course Philosophy I, 46 one weekly exercise of two hours in translating Kant's *Kritik der reinen Vernunft*.

[Wednesday, 9.30-11.20 A. M., F, O. This time will be changed to suit the convenience of those taking the course.]

- *32 *Goethe, Life, Shorter Poems and Faust.* 2 hrs.

Together with outline study of Goethe's life a large number of his shorter poems will be read in chronological order, and then particular attention given to the translation and interpretation of *Faust* (both parts).

[Monday and Friday, 9.30 A. M., F, O.]

- *33 *Goethe, Prose Works.* 1 hr.

Reading and discussion of Goethe's more important prose works and utterances in letters, journals and conversations.

[Wednesday, 8.30 A. M., F, O.]

- *34 *History of German Literature, 1624-1832.* 2 hrs.

The development of German literature will be studied from the time of Opitz to Goethe's death. The text-books will be : Kluge's *Geschichte der Deutschen National-Litteratur*, Scherer's *History of German Literature*, Max Müller's *German Classics*, and Hillebrand's *German Thought from the Seven Years' War to Goethe's Death*.

[Monday and Friday, 3.00 P. M., F, O.]

Professor GRUENER :—

- [35 *Middle High German.* 3 hrs.

Hartmann : *Der Arme Heinrich* and *Iwein*. *Nibelungenlied*. Selected poems of Walther von der Vogelweide. Selections from Wolfram von Eschenbach's *Parzival*. Lectures and papers.

Omitted in 1903-1904.]

- 36 *German Literature of the Reformation Period (1500-1624).* 3 hrs.

The development of German literature is studied from the beginning of the Reformation to the time of Opitz. Characteristic works of the important writers of the period are read, chiefly for literary purposes, though also with reference to the political, social, and religious conditions of the times.

- *37 *Classical German Drama.* 2 hrs.

Rapid reading and literary study of Lessing's *Nathan der Weise*, Goethe's *Götz von Berlichingen* and *Iphigenie auf Tauris*, and Schiller's *Wallensteins Tod*. Lectures on the literature of the classical period with especial reference to the development of the German drama.

[Wednesday and Friday, 10.30 A. M., F, O.]

Professor CORWIN :—

- 38 *Old High German.* 3 hrs.

A rather detailed course in the oldest High German dialects and literature. Braune's *Althochdeutsche Grammatik* and *Althochdeutsches Lesebuch*, and the collateral literature for reference.

- [39 *History of New High German.* 2 hrs.

The earlier periods of the language will first be surveyed, for the purpose of gaining a comprehensive idea of the chief linguistic phenomena and their causes. Upon this basis a more special study will be made of the origin and development of New High German.

Omitted in 1903-1904.]

Dr. GLASCOCK :—

- 40 *Phonetics of Modern German.* 1 hr.

During the first half-year a course of lectures and practical exercises in phonetics will be given, the primary object of which will be scientific knowledge of the processes involved in the correct pronunciation of modern German.

- 41 *'Storm and Stress' in German Literature.* 1 hr.

The period in German literature known as *Sturm und Drang*, its origin, and its relation to early Romanticism, will be studied. A course of lectures will be given, and selections will be read from Klinger, Leisewitz, Wagner, Lenz, Maler Müller, Schubarth, and, perhaps, Goethe and Schiller. The text-books will be: *Stürmer und Dränger*, *Deutsche National-literatur*, hrsg. von J. Kürschner, Bände 79-81, Stuttgart.

Mr. FARR :—

- *42 *German Literature of the Nineteenth Century.* 2 hrs.

This course is designed to give the student a survey of German literature after the death of Goethe. Representative works of the best known authors will be read in class, and occasional lectures will be given to show the development of German literature during the nineteenth century.

[Tuesday and Thursday, 11.30 A. M.]

SCANDINAVIAN

- _____ :—
- [43 *Old Norse (Icelandic)*. 3 hrs.
Grammar, and reading in the Sagas and the Elder Edda.
Omitted in 1903-1904.]
- [44 *Norwegian and Danish*. 2 hrs.
The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.
Omitted in 1903-1904.]
- 45 *Swedish*. 2 hrs.
The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

ENGLISH

Professor LOUNSBURY :—

- 46 *The Early Victorian Era: Tennyson and his Contemporaries*. 2 hrs.

Professor BEERS :—

- *47 *Milton and his Contemporaries*. 2 hrs.
The subject will be treated with special reference to the political and religious conflict of the times. All of Milton's English verse will be read, a few of his Latin poems, and much of his prose. The work of the Church poets and Cavaliers will be examined, as also various diaries and memoirs, and portions of the writings of Fuller, Clarendon, Butler, Marvell, Bunyan, etc.
[Monday and Wednesday, 11.30 A. M.]
- *48 *Medieval Allegory*. 2 hrs.
The *Purgatory of Dante*, the *Romaunt of the Rose* and a portion of *Piers Plowman* will be read in class, together with other texts illustrative of the subject. A fair reading knowledge of Italian is required of students electing this course.
[Tuesday and Thursday, 5.00 P. M.; second term, 3.00 P. M.]

Professor Cook :—

The strictly graduate courses offered below are given according to circumstances and the needs of the graduate students actually in attendance; and special attention is given to the supervision of individual research in any part of the general field.

49 *Encyclopaedia and Methodology of English.* 2 hrs.

This course is designed to acquaint the student with philological principles in general, with the more important branches of scholarship relative to the English language and literature, with a few of the representative books in each of these branches, and with the scope and method of research in this department.

A knowledge of German is essential in this course.

[Wednesday, 4.00 P. M., 135 Elm st.]

50 *Theories of Poetry.* 2 hrs.

A course in the theories of poetry in general, and in the principles of criticism applicable to its various departments, as the epic, dramatic, and lyric. Discussions and papers on the basis of standard works, such as Aristotle's *Poetics*, Sidney's *Defense of Poesy*, Woodbridge's *The Drama*, Boileau's *Art of Poetry*, Lessing's *Laokoon*, and others of similar character. Reading of masterpieces to illustrate and extend the principles derived from theoretic works.

[Wednesday, 3.00 P. M., 135 Elm st.]

[51 *Dante in English.* 2 hrs.

A course primarily in the *Divina Commedia* and the *Vita Nuova*, though selections from the other works are also read. Two or three of the best English translations are employed, together with such reference books as may be necessary. Much attention is bestowed upon the historical and literary background of the poet and his works.

Omitted in 1903-1904.]

52 *Literary Types.* 2 hrs.

A survey of European literature, with reference to the characterization and illustration of the more important species. Candidates must satisfy the instructor with regard to their proficiency in French, German, and Latin.

[Tuesday, 3.00 P. M., 135 Elm st.]

53 *Advanced Old English.* 2 hrs.

Selected works read especially with reference to the acquisition of scholarly methods. The course this year begins with the study of Cook's edition of Cynewulf's *Christ*.

A knowledge of German is essential in this course.

[Thursday, 11.30 A. M., 135 Elm st.]

54 *Seminary in English Literature.* 3 hrs.

A critical study of some representative writer or department of literature. In 1894-95, Ben Jonson was selected; in 1895-96, Browning; in 1896-97, Chaucer; in 1897-98, the Jacobean Drama; in 1898-99, Spenser; in 1899-1900, 1900-1901, 1901-1902, and 1902-1903, Chaucer.

[Alternate Mondays, 7.00 P. M., 135 Elm st.]

55 *Historical English Prosody.* 2 hrs.

A brief consideration of metres in the related languages, followed by an outline of the subject traced from the Old English period to the present day.

[Tuesday, 11.30 A. M., 135 Elm st.]

56 *Old and Middle English.* 2 hrs.

An elementary course in the beginnings and earlier development of the English language and literature. Reading is begun at the earliest practicable moment, and the study is made as literary in character as is consistent with a thorough grounding in the rudiments of the language. This course, while it is indispensable to all graduate students and future teachers of English, and will also be of service to students of English history and of the English Bible, is designed as well for those who, in the pursuit of general culture, are unwilling to remain ignorant of the foundations of the English language and literature.

[Tuesday and Thursday, 10.30 A. M., C₁ O.]

Professor LEWIS :—

57 *Verse Composition.* 1 hr.

Fortnightly practice in composition, with regular appointments for consultation and criticism. A study of the chief varieties of English verse and stanza (such as blank verse, heroic verse, the sonnet, etc.).

58 *Shakespeare.* 2 hrs.

A minute study of three or four of the greater plays, such as *Macbeth*, *King Lear*, *Hamlet*. Critical examination of the text, and of the work of the leading commentators, and investigation of dates and sources.

[Tuesday and Thursday, 9.30 A. M.]

Professor PHELPS :—

[59 *Elizabethan Literature.* 2 hrs.

Studies in the poetry and prose of the Elizabethan period, exclusive of the drama. Wyatt, Surrey, Ascham, Foxe, Painter, Lyly, Raleigh, Greene, Nash, Lodge, Marlowe, Hooker, Sidney, Spenser, Shakespeare, Davies, Drayton, Chapman, and others. Lectures, discussions, and preparation of special papers by members of the class.

Omitted in 1903-1904.]

[60 *English Literature of the Seventeenth Century.* 2 hrs.

A rather minute study of English poetry and prose from Donne to Dryden. The poetry of Donne, Drummond, Herbert, Crashaw, Vaughan, Quarles, Carew, Suckling, Herrick, Cowley, Milton, Waller, Marvell, Butler, and Dryden is read; also the prose of Burton, Browne, Taylor, Pepys, Fuller, Walton, Clarendon, Milton, Bunyan, and Dryden. The social life of the times is discussed.

Omitted in 1903-1904; will be given in 1904-1905.]

[*61 *Tennyson and Browning.* 2 hrs.

The autumn term will be occupied with the study of Tennyson. Practically all of his poetry will be read. His theory of the poet's art, his skill in technique, his artistic expression, and his representation of nineteenth century ideas, will be studied in detail.

After Christmas, the complete works of Browning will be taken up, only those being omitted which are unnecessary in forming a general estimate of his work as a poet. His personal force, his growth, his attitude toward his art, and his place in nineteenth century poetry will be considered; but the chief attention will be paid to his analysis of human life and character.

The instruction in this course will be by means of recitations, discussions, and the preparation of short special papers by the students.

Omitted in 1903-1904 ; will be given in 1904-1905.]

[*62 *Elizabethan Drama.* 2 hrs.

The English drama, from the mystery plays to the closing of the theatres in 1642, studied from both the literary and the dramatic points of view. Plays of the pre-Elizabethan period are read and briefly discussed, with the object of getting a historical background. Some plays of all the principal dramatists from 1580 to 1640, except Shakespeare, will be read : Marlowe, Ben Jonson, Dekker, Heywood, Chapman, Middleton, Beaumont and Fletcher, Webster, Ford, Massinger, Shirley. As a rule, one play will be read for each lesson.

The method of instruction in this course will be by lectures. A weekly one-page critical theme will be required of each student in the class.

Omitted in 1903-1904 ; will be given in 1904-1905.]

Professor CROSS :—

[63 *English Prose Fiction.* 1 hr.

The period covered by this course varies from year to year.

Omitted in 1903-1904.]

64 *Romantic Verse since 1850.* 1 hr.

This course deals mainly with the so-called Pre-Raphaelites, as Dante Gabriel Rossetti and William Morris. These and other poets are studied in connection with the medieval romances from which they drew. The work thus includes literary history and a study of sources.

[Tuesday, 2.00 P. M., 20 South Sheffield Hall.]

Assistant Professor BALDWIN :—

*65 *Rhetoric (six essays).* 1 hr.

Practice in more extended composition, especially in criticism ; detailed analysis of a few nineteenth-century essayists and of assigned topics in critical method ; regular appointments. The range of subjects is unrestricted ; but the course is adapted especially to those students who wish further practice in personal interpretation of their courses in literature or the other arts.

[Hour to be arranged.]

[66 *The Transition Period* (after 56 or its equivalent). 1 hr.

Studies in fifteenth century English language and literature ; the development of prose in syntax and style (Pecock, Malory, More, Fortescue, Caxton, the Paston letters) ; the Chaucerian tradition in poetry ; the ballads ; the passing of romance.

Omitted in 1903-1904.]

Dr. OSGOOD :—

67 *Middle English Romances.* 1 hr.

A study of the various groups of romances upon the basis of Billings' *Guide to Middle English Metrical Romances*, supplemented in some cases by other outlines. The work will consist in part of the detailed study of two or three texts in the best editions, such as Hall's *King Horn*, Hausknecht's *Floris and Blauncheflur*, and Kölbing's *Amis and Amiloun* and *Sir Tristram*. This will be supplemented by more extended reading in the romances and elsewhere for the purpose of obtaining a general survey of the subject.

[Monday, 9.30 A. M.]

THE USE OF THE LIBRARY

Mr. KEOGH :—

68 *Bibliography.*

Ten lectures on certain practical aspects of bibliography. Discussion of general reference books ; the means of finding what has been published on a subject ; the reviewing of books ; the classification and cataloguing of libraries ; the taking and filing of notes and references ; the compilation of bibliographies ; the making of indexes ; the printing of theses ; the law of copyright.

VI. PHYSICAL AND NATURAL SCIENCE

WILLIAM H. BREWER, Ph.D.	ARTHUR W. WRIGHT, Ph.D.
ADDISON E. VERRILL, M.A.	SIDNEY I. SMITH, M.A.
WILLIAM G. MIXTER, M.A.	HENRY S. WILLIAMS, Ph.D.
EDWARD S. DANA, Ph.D.	CHARLES S. HASTINGS, Ph.D.
FRANK A. GOOCH, Ph.D.	RUSSELL H. CHITTENDEN, Ph.D.
SAMUEL L. PENFIELD, M.A.	HORACE L. WELLS, M.A.
CHARLES E. BEECHER, Ph.D.	LOUIS V. PIRSSON, Ph.B.
HARRY B. FERRIS, M.D.	HENRY S. GRAVES, M.A.
PHILIP E. BROWNING, Ph.D.	JAMES W. TOUMEY, M.S.
HENRY L. WHEELER, Ph.D.	ALEXANDER W. EVANS, M.D., Ph.D.
HERBERT E. GREGORY, Ph.D.	LAFAYETTE B. MENDEL, Ph.D.
WESLEY R. COE, Ph.D.	JOSEPH BARRELL, Ph.D.
WILLIAM J. COMSTOCK, Ph.B.	EDWARD A. BOWERS, B.A.
ISAAC K. PHELPS, Ph.D.	LEONARD M. TARR, M.A.
HARRY W. FOOTE, Ph.D.	GEORGE F. EATON, Ph.D.
LEO F. RETTGER, Ph.D.	HENRY H. ROBINSON, Ph.B.
ARTHUR L. DEAN, Ph.D.	ANDREW L. WINTON, Ph.D.
WILLIAM E. FORD, JR., Ph.B.	

The work in PHYSICS is carried on in the Sloane Physical Laboratory, and the Physical Laboratory of the Sheffield Scientific School in Winchester Hall:

The work in CHEMISTRY in the Sheffield Chemical Laboratory, and in the Kent Chemical Laboratory:

The work in MINERALOGY, PETROLOGY, GEOLOGY, PALEONTOLOGY, and ZOOLOGY in the Peabody Museum of Natural History:

The work in PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY in the Sheffield Biological Laboratory:

The work in COMPARATIVE ANATOMY and GENERAL BIOLOGY in the Sheffield Biological Laboratory:

The work in BOTANY in the Eaton Herbarium, Sheffield Hall:

The work in FORESTRY in the Forest School.

The GEOLOGICAL CLUB is an association of the instructors and graduate students, for the purpose of encouraging the students to prepare papers, and aid in the discussion of current topics of interest in geological subjects.

The PHYSICS JOURNAL CLUB, open to graduate students in Physics, meets weekly for the review and discussion of the current literature in this department of study.

The PHYSICAL CLUB, organized for study, criticism and discussion, holds fortnightly meetings. Open to graduate and advanced students in Physics.

The KENT LABORATORY JOURNAL CLUB meets fortnightly for the review and discussion of current chemical literature.

The CHEMICAL CLUB, composed of instructors, graduate students, and others interested in chemistry, holds fortnightly meetings for the presentation and discussion of papers and reviews of recent work.

The BIOLOGICAL CLUB, composed of instructors, graduate students, and others instructed in Biology, meets fortnightly for the presentation and discussion of papers and reviews of recent work.

PHYSICS

Professor A. W. WRIGHT :—

- 1 *Physics.* 4 hrs., to count as 2 hrs.

Chiefly practical work in the Sloane Physical Laboratory, with measurements, especially in heat, light, electricity, and magnetism, each exercise occupying two hours. As introductory to the laboratory practice, the exercises during a portion of the first term consist of recitations or discussions upon the theory and methods of physical measurements, the use of instruments, and other special topics. Laboratory facilities are also freely accorded to students of the course at other times than those of the stated exercises.

[Monday and Friday, or Tuesday and Thursday, 9.30–11.20 A. M., Sloane Laboratory.]

- 2 *Physics (Advanced Course).* 4 hrs., to count as 2 hrs.

Practical work in the Sloane Physical Laboratory, with instruction in the principles and methods of physical investigation, the processes and instruments of measurement, and the methods of computing and reducing results of observations. Special

attention is paid to practical measurements in optics, electricity, and magnetism. The student is expected to make original investigations an important part of his work, and has the free use of the laboratory facilities for carrying them on.

For those who have already pursued course 1 or its equivalent.

[Wednesday, 10.30 A. M.—12.30 P. M., and Thursday, 11.30 A. M., Sloane Laboratory.]

Professor HASTINGS :—

3 *Physics*. 3 hrs. lectures, 6 hrs. laboratory work.

Laboratory work in the Sheffield Physical Laboratory, supplemented by lectures on the theory of observation with the method of least squares, and on the theory of electricity and electrical instruments. The use of the laboratory is at the command of the student at all times.

[Lectures on Monday, Wednesday, and Friday, 12.00 M.]

For courses in Mathematical Physics, see VII.

CHEMISTRY

(COURSES IN THE SHEFFIELD CHEMICAL LABORATORY)

The analytical laboratories of the Sheffield Scientific School are open to students in term time from 9 to 1 and from 2 to 5 o'clock, every week-day except Saturday. The greater part of the instruction is given in the laboratory to each student separately, but the various classes have, in addition, two or more lectures or recitations a week, in connection with the studies pursued in the laboratory.

Professor MIXTER :—

4 *Chemical Physics*.

Especially the methods employed in the determination of molecular masses and specific heat.

Professor WELLS :—

5 *Qualitative Analysis.* 1st term.

Embraces a study of the commonly occurring elements in their qualitative relations, and includes a systematic course of analysis for the same. A good knowledge of elementary chemistry is a necessary preparation for this. If desired, the course is extended to include a study of many of the rare elements.

[Laboratory hours: Monday to Friday, 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M. Lectures and recitations: Monday and Tuesday, 3.00 P. M.,—occasionally at 12.00 M.]

6 *Quantitative Analysis.*

This is open only to those who have taken course 5 or its equivalent.

(a) *Gravimetric Analysis.* Second term. Embraces a series of exercises involving a considerable number of important methods.

(b) *Volumetric Analysis.* First term. This follows the gravimetric analysis. It includes the most important and typical methods.

(c) *Ultimate Organic Analysis.* First term.

7 *Inorganic Preparations.* 1st half of 2d term.

A course of laboratory work, with lectures and recitations. About thirty or forty compounds are prepared, which give a variety of important and instructive processes.

8 *Advanced Quantitative Analysis.*

(a) *Metallurgical Chemistry.* The analysis of ores, fuels, fluxes, alloys, metals, and other furnace products.

(b) *Mineralogical Chemistry.* The analysis of minerals for scientific purposes.

Laboratory hours, every week-day (except Saturday), 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M.

9 *Metallurgy and Assaying.* 2d half of 2d term.

A course of recitations and lectures on elementary metallurgy followed by a short course of demonstrative lectures on gold and silver assaying, with the practical application of assaying to a few typical ores.

- 10 *Technical Gas-Analysis.* 2d half of 2d term.

A short practical course, including the principal methods.

- 11 *Sanitary Water-Analysis.* 1st half of 2d term.

A practical course in the chemical examination of drinking-waters. Two exercises of three hours each per week.

- 12 *Investigations in Inorganic Chemistry.*

Opportunities are offered, to those who have had sufficient preparation, to make researches upon analytical methods, the preparation of chemical compounds, and other scientific problems.

Mr. COMSTOCK :—

- 13 *Elementary Organic Chemistry.* Both terms.

During the first four weeks of the second term the afternoon exercises are omitted and daily laboratory work substituted, 9.00 A. M. to 1.00 P. M., with occasional lectures at 12.00 M.

[Recitations supplemented by lectures, Thursday and Friday, 5 P. M.]

- 14 *Organic Chemistry.* 2 hrs. 1st term.

A continuation of the above course. Recitations and lectures. [Monday and Tuesday, 5.00 P. M.]

Assistant Professor H. L. WHEELER :—

- 15 *Advanced Organic Chemistry.*

This offers an opportunity for more extended study and original investigation to those who have proper preparation.

- 16 *Organic Preparations.* 2d half of 2d term.

Laboratory work, consisting of five exercises per week of about three hours each, in the preparation of such compounds as will give familiarity with the most important synthetical methods.

Mr. WINTON :—

- 17 *Proximate Organic Analysis.* 1st half of 2d term.

Lectures on the chemical composition of vegetable and animal substances (including foods) and laboratory practice in the detection and quantitative determination of the various consti-

tuments. The materials studied include cereal products, oil seeds, milk and its products, fats and oils, alcoholic liquors, tea, coffee, spices, tannin products, etc. A special feature is the identification of vegetable materials by microscopical examination. This course is open only to those who have previously taken courses in qualitative and quantitative analysis. Some knowledge of botany and vegetable histology is also highly desirable.

18 *Advanced Proximate Organic Analysis.*

2d half of 2d term.

A continuation of the preceding course. Among the materials which may be studied are foods, wood products, textile fibers, dye stuffs, etc. Special attention is given to the detection of adulteration. The microscopical work includes a systematic study of various economic seeds, roots, leaves, barks, woods, etc. with special reference to their identification in powder form.

19 *Agricultural Chemical Analysis.*

Laboratory practice in the analysis of fertilizers, cattle foods, dairy products, insecticides, fungicides, and various other agricultural materials. Special attention will be given to the microscopic examination of cattle foods.

Dr. FOOTE:—

20 *Physical Chemistry.*

2d half of 2d term.

A course of lectures on the theory of Physical Chemistry, one hour weekly.

[Monday, 5.00 P. M.]

21 *Physico-Chemical Measurements.*

2d term.

Laboratory practice in the more important methods of Physical Chemistry.

[Monday to Friday, inclusive, 9.30 A. M.—1.00 P. M.]

22 *Electro-Chemistry.*

2d term.

Experimental work in Electro-Chemistry, including the usual measurements, quantitative electro-analysis, and the synthesis of organic and inorganic compounds.

[Monday to Friday, inclusive, 9.30 A. M.—1.00 P. M.]

(COURSES IN THE KENT LABORATORY)

The Kent Laboratory is open daily from 9.00 A. M. to 1.00 P. M., and from 2.00 to 5.00 P. M., to students who take strictly graduate courses.

Professor GOOCH, Assistant Professor BROWNING, and
Dr. I. K. PHELPS :—

*23 *Inorganic Chemistry—Experimental and Descriptive.*

3 exercises—6 hrs.

Lectures, laboratory work, and class-room exercises. An introduction to elementary chemical theory, the use of symbols and equations, and the study of the elements and their compounds.

[I, Wednesday and Friday ; II, Tuesday and Thursday ;
I, II, Monday, 11.30 A.M.—1.20 P. M.]

Assistant Professor BROWNING :—

*24 *Qualitative Analysis.*

3 exercises—5 hrs.

Laboratory practice in the ordinary processes of qualitative analysis, with lectures.

[Monday and Friday, 8.30–10.20, Wednesday, 8.30–9.20
A. M.]

Professor GOOCH and Dr. I. K. PHELPS :—

*25 *Organic Chemistry.*

3 exercises—5 hrs.

An introduction to the study of the compounds of carbon. Lectures, written exercises, and laboratory work. Open to those who have completed course 24, or its equivalent.

[Monday, 10.30–1.20, and Wednesday and Friday, 10.30–
11.20 A. M.]

Professor GOOCH :—

*26 *Quantitative Analysis.*

2 exercises—6 hrs.

Lectures with laboratory practice in the use of the simpler methods of gravimetric quantitative analysis.

[Wednesday and Friday, 2.00–4.50 P. M.]

27 *Quantitative Analysis (second course).*

Practice in the more complex processes of gravimetric, volumetric, and electrolytic analysis.

[Hours for consultation fixed by appointment.]

28 *Chemical Theory.* 1 hr.

This course is devoted to the historical development of the general principles and modern theories of chemistry.

[Tuesday, 5.00–5.50 P. M.]

29 *Special Methods.*

Laboratory practice in special methods of analysis and research.

[Hours for consultation fixed by appointment.]

30 *Original Work and Research in Inorganic Chemistry.*

(a) Special problems of *analysis*—either experimental criticism of known processes or constructive work looking towards the development of new methods.

(b) The critical examination of reactions.

[Hours for consultation fixed by appointment.]

Assistant Professor BROWNING :—

31 *Inorganic Preparations.* 2 hrs.

A short course, mainly laboratory work, covering typical methods for the preparation of inorganic salts.

[Tuesday, 3.00–4.50 P. M.]

32 *The Rare Elements.* 2 exercises—3 hrs.

Lectures with laboratory work covering the principal reactions of the elements not included in the general course. The methods in use for the qualitative and quantitative determination of these elements are carefully studied, and a systematic arrangement developed so far as practicable.

[Monday, 2.00–4.50 P. M.]

Dr. I. K. PHELPS :—

33 *The Carbon Compounds—Descriptive and Theoretical.* 3 hrs.

A course of lectures treating systematically the more important compounds of carbon and the theories concerning them. An elementary knowledge of organic chemistry is desirable as a preparation.

[Tuesday, Thursday and Saturday, 8.30–9.20 A. M.]

34 *Organic Synthesis.*

Laboratory practice in synthetical processes too long or too complicated to be included in the experimental work of course 25.

[Hours for consultation fixed by appointment.]

MINERALOGY.

Professor PENFIELD :—

35 *Determinative Mineralogy.* 3 hrs.

The object of this course is to gain familiarity with the common minerals together with facility in their identification. The subject is treated mainly from a chemical standpoint, and it is assumed that all who take the course have some familiarity with the principles of elementary chemistry. A portion of the time allotted to the course (about one quarter) is devoted to the study of simple chemical reactions performed both in the dry way with the aid of the blowpipe and in the wet way with reagents, and such tests are subsequently made the basis of the determination of mineral species. The mineralogical laboratory is open daily from 9-1 and (Saturdays excepted) from 2-5, and by devoting more than the allotted time to the subject the course may be extended to any desired extent.

[Wednesday, 2.00-5.00 P. M., or Saturday, 9.00 A. M.-12.00 M.]

36 *Crystallography and Descriptive Mineralogy.*

2 hrs. 1st half of 2d term, 3 hrs. 2d half of 2d term.

These two subjects are treated together, a group or class of crystals being first studied and then the mineral compounds belonging to that class. Instruction is given by means of lectures and practical demonstrations, the varieties of form and development of crystals being illustrated by means of glass and wooden models and a collection of natural crystals, while in descriptive mineralogy specimens from the valuable and extensive Brush Collection are studied.

For the benefit of those who can devote but one hour a week to these subjects a course similar to the above, but necessarily abridged, is given each year, it being supposed that those who take the shortened course will be able to supplement it by reading and study so as to make it practically an equivalent to the longer one.

[Monday and Tuesday, 3.00-4.00 P. M., and during 2d half of 2d term, Saturday, 9.15-10.15 A. M. Abridged course, Wednesday, 5.00-6.00 P. M. throughout the year.]

37 *Experimental Work in Crystallography.* Daily.

The chief features of this course are the measurement of the angles of crystals with the reflection goniometer; the determination of symmetry; the plotting of the forms of crystals in the stereographic and linear projections; the calculation of axial ratios of crystals and of the symbols of their faces; and the drawing of crystal forms and combinations. For an elementary course, including a few examples in each of the six systems, a practical exercise (3 hrs.) once a week throughout the year is generally sufficient; the course may be lengthened and varied, however, to almost any desired extent. A knowledge of plane trigonometry is indispensable, and some experience in mechanical drawing is most desirable.

38 *Experimental Work in the Optical Properties of Crystals.* Daily.

In this course the optical properties of crystals are studied and determined. Students learn to use the refractometer, total reflectometer, polariscope, polarizing microscope, axial angle apparatus and other optical appliances. A knowledge of optics is indispensable.

39 *Original Investigation in Mineralogy and Crystallography.*

Those who are sufficiently advanced may undertake research work in mineralogy and crystallography. Such work may be along the lines of analytical chemistry for determining the composition of minerals, or the crystallographic and optical properties of minerals may be studied. Material for investigation is available from the Brush Collection and the University Mineral Cabinet.

Mr. FORD:—

40 *Ore Deposits.* 1 hr. 2d half of 2d term.

A short course of lectures of an elementary nature. Emphasis is laid on the principles of ore deposition and short descriptions are given of the typical and important ore deposits of North America. The course is illustrated by lantern slides and by specimens taken from the ore collection of the Sheffield Scientific School. A knowledge of elementary mineralogy and geology is desirable.

PETROLOGY

Professor PIRSSON :—

41 *Petrology.*

Daily, 9 A. M. to 1 P. M.

(a) Study and determination of the rock-making minerals by optical and chemical methods. Includes the use of the petrological microscope.

(b) History, origin, and classification of rocks, commencing with igneous types and passing into the crystalline schists, during which metasomatic and dynamic changes, including effects of dynamo-metamorphism, are taken up. The work is carried on mostly in the laboratory, with access to collections both of rocks and thin sections.

(c) Original investigation. In sequence to (a) and (b) some special object or locality may be made the subject of investigation. The work requires laboratory methods of determination, both chemical and microscopical, with consultation of the literature and occasionally work in the field. A large amount of material is available in the petrologic collections of the Sheffield Scientific School.

Only those whose previous training in mineralogy and geology has been sufficient to enable them to pursue the subject advantageously are admitted to this course.

42 *Elementary Petrology.*

1 hr. 1st half of 2d term.

A series of lectures of an elementary nature, and without the use of the microscope, on the history, origin, and classification of rocks with especial reference to their geologic relations and economic properties. Illustrated by collections.

[Hours to be arranged.]

GEOLOGY

Professor PIRSSON :—

*43 *Elementary Structural and Dynamical Geology.*

3 hrs. 1st half-year.

This course in Geology is given partly by lectures and partly by recitations with the use of a text-book. It includes the elements of structural and dynamical geology, and these subjects are illustrated by maps, diagrams, photographs and specimens. The course is especially designed as an introduction to more extended geological studies, and may be followed advantageously by course 44.

Professor BEECHER :—

- *44 *Historical Geology.* 3 hrs. 2d half-term.

The sequence and distribution of the sedimentary formations are studied, together with the introduction and succession of the various types of life during past geological ages. Suitable collections of fossils are used to illustrate the subject. This course should follow 43.

Assistant Professor GREGORY :—

- *45 *General Geology.* 2 hrs.

A course of lectures on the general principles of the science of geology. Such topics will be discussed as will give an understanding of the structural features of the earth and of the forces by which its present condition has been attained. The lectures will be supplemented by the use of a text-book and illustrated by specimens and lantern views. Optional excursions to points of geologic interest will be arranged.

Asst. Profs. GREGORY and BARRELL and Mr. ROBINSON :—

- *46 *Geology, with field and laboratory work.* 3 hrs.

This course will include the exercises of course 43, General Geology, and in addition field and laboratory work will be assigned to average two hours per week. The laboratory work will consist of the study of important minerals and fossils; the field work will include geologic mapping and excursions. [Students who take this course must leave Monday or Tuesday afternoon free from 2.00-5.00.]

Mr. H. H. ROBINSON :—

- 47 *Field Geology.* 6 hrs., to count as 3 hrs.

The course will consist of field work upon selected areas in the vicinity of New Haven, supplemented by lectures and laboratory exercises upon the construction and use of topographic and geologic maps.

Assistant Professor GREGORY :—

- 48 *Geology of Connecticut.*

A study of some problem connected with the physical geology of Connecticut. The work will be carried on in connection

with the United States Geological Survey and in every case a written report will be required. This report may be presented as a thesis for an advanced degree.

*49 *Physiography.* 2 hrs.

A study of the origin, development and classification of land forms followed by a study of the physiography of the United States. The exercises will include lectures, field excursions, the reading of topographic maps and of geologic literature.

50 *Physiography.*

The origin, development and classification of land forms, as illustrated by some area selected for special study.

Assistant Professor BARRELL :—

52 *Dynamical and Structural Geology.* 3 hrs.

An advanced course consisting of studies on the nature of geological agencies operating within the crust of the earth and their effects. Subjects are taken up as: the causes and nature of joints, faults, folds, fissure veins, metamorphism, mountains and igneous intrusions. The exercises will consist of lectures, the study of geological literature and field and laboratory problems. [Students who take this course must leave Wednesday or Thursday afternoon from 2.00–5.00, as these afternoons will occasionally be submitted for the regular class hour.]

[Monday and Wednesday, 11.30 A. M.]

53 *Dynamical and Structural Geology.*

A study of folds, faults, views, metamorphism, mountain making, etc. for those who wish to specialize in geology. Problems for investigation will be assigned with a view toward the preparation of theses for advanced degrees. A knowledge of petrography is required.

Mr. TARR :—

54 *Meteorology.*

This course will include studies of the general circulation of the winds; the development of storms; storm tracks and their effect on climate; thermodynamics of the atmosphere; methods of forecasting the weather. The instruments, records and charts of the United States Weather Bureau office will be available for research work.

Professor H. S. WILLIAMS :—

2 hrs.

55 *Historical Geology.*

Elementary study of geological formations and of the principles of their classification and correlation by fossils, consisting chiefly of laboratory study of collections, reading of geological literature and the preparation of scientific papers.

56 *Faunal Paleontology.*

Daily.

A special study of fossil faunas, their composition, relations to conditions of environment, origin, geographical distribution and succession in time. The Laboratory of Devonian Paleontology of the United States Geological Survey is available for illustration, as well as the collections in the Peabody Museum. This course is specially intended for men preparing for practical geological survey work, for whom opportunity for summer practice may be arranged.

*57 *Organic Evolution.*

2 hrs.

An elementary lecture course on evolution, supplemented by study and discussion of Darwin's *Origin of Species*, and other theories of evolution.

PALEONTOLOGY

Professor BEECHER :—

58 *General Invertebrate Paleontology.* 2 hrs. 1st term.

An elementary course, including the careful study in the laboratory of characteristic genera representing the principal orders of fossil invertebrates.

59 *Invertebrate Paleontology (Special).*

Systematic study of the structure, development, and affinities of one or more classes of fossil animals. In the laboratory work, attention is given to modern methods of preparation and preservation of specimens.

60 *Original Investigation in Invertebrate Paleontology.*

Following 58 and 59, opportunity is given to take up some special subject for investigation and the discovery of facts new to science.

The requisite material is available in the extensive collections of the Peabody Museum.

The work in these courses (58-60) necessitates the frequent consultation of memoirs and scientific reports, occasional field-work, the use of the microscope, the preparation of thin sections, and other methods employed in thorough investigations.

61 *Organic Evolution.*

1st half-year.

Practical illustration of the methods used in modern researches, and the principles governing the classification of organisms.

Courses 59-61 are open to those who have had some previous knowledge of geology and zoology. Course 59: laboratory work 4 hours per week. Courses 59-61: laboratory work three days per week, 2.00-5.00 P. M. Courses 59 and 60 will require about two hours of lectures and two hours in the laboratory each week. Other hours and divisions of work may be arranged to suit the convenience of students.

BIOLOGY

Professor VERRILL :—

62 *Zoology.*

Laboratory practice, recitations, readings, and lectures. The laboratory work is varied according to circumstances, in order to accommodate, as far as possible, those students who wish to pursue special branches. Most of the time is devoted to comparative anatomy, morphology, histology, and systematic zoology. Ample collections in the Peabody Museum, representing all classes of animals, are available for instruction, while the proximity to the sea makes it easy to provide fresh or living examples of most classes of marine animals for study and dissection.

Excursions may be arranged, when desirable, for the study of marine animals in their natural surroundings, on the adjacent sea coasts, and for making collections. Occasionally parties of advanced students have been taken to the coral-reefs of the Bermuda islands for these purposes. Extensive collections of insects are available for the study of Economic Entomology.

Professor S. I. SMITH and Assistant Professor COE :—

*63 *General Biology.*

3 hrs.

*64 *Comparative Anatomy and General Biology.* 6 hrs. 2d term.

65 *Comparative Anatomy and General Biology.*

Graduate students who have had sufficient elementary training are received in the Sheffield Biological Laboratory, and are provided with special advanced courses of instruction adapted as far as possible to the particular wants of the individual student. Such courses may cover either or both terms, and require at least three hours of laboratory work per day for two or more days each week. To such students the laboratory is open five days a week

66 *Morphology and Embryology of Vertebrates.*

1st half 2d term.

A course of about twenty exercises of two hours each, consisting of lectures and demonstrations with laboratory work. The classification of vertebrate animals, and the comparative morphology of the different sets of organs in the various groups, is first discussed with special reference to human morphology. Then the development, fertilization and cleavage of the egg, and the formation of the germ layers, tissues and organs of the vertebrate body are taken up in order. The course may be supplemented, if desired, by more extended practical work in the laboratory.

Assistant Professor COE :—

67 *Biology of the Cell.*

A general course in Cytology, consisting of laboratory work supplemented by informal lectures, on the structure and manifestations of the animal cell, with special attention to maturation, fertilization, and cleavage of the ovum. The subject is treated with reference to its bearing on the problems connected with the phenomena of growth, heredity and evolution. The course will include the practical study of protoplasmic structure and movement, various types of cells with resting nuclei, cell-division, conjugation in unicellular animals, structure of sperm-ary and development of spetmatozoa, ovary and development of the ovum, fertilization, parthenogenesis, types of cleavage, and formation of primary layers of the embryo. Considerable attention is given to the technique of the subject, and to experimental embryology.

68 *General Embryology.*

Laboratory work and informal lectures on the development of certain types of invertebrates, followed by a similar study of the elementary principles of vertebrate embryology.

In addition to the above, special courses may be arranged for either term to meet the requirements of individual students, and such courses may include a study of the later stages of the development of the embryo, with special reference to the vertebrates, and a practical study of the development of the chick.

DR. EATON:—

69 *Comparative Osteology.*

2 hrs.

An elementary course especially designed as a preparation for the study of Vertebrate Paleontology. Laboratory work in which the most important types of the vertebrate skeleton are studied and compared. Hours will be arranged by the instructor upon consultation.

Professor FERRIS:—

70 *Comparative Morphology of the Vertebrate Brain.* 1 hr.

A course extending through the entire year, consisting principally of dissections and drawings, with some demonstrations and lectures, on the embryology and general morphology of the brain.

Professor CHITTENDEN and Assistant Professor MENDEL:—

71 *Physiological Chemistry.*

Graduate students who have sufficient knowledge of analytical and organic chemistry and elementary physiology are received in the Sheffield Biological Laboratory at the beginning of the academic year, where they can pursue a course in physiological chemistry extending throughout the entire year. The course necessitates, on an average, four hours of laboratory work each day, and attendance at lectures and recitations three or four times each week.

Students who are desirous of studying any special subject in physiological chemistry and have but a limited amount of time are received also, provided they are qualified by previous work to pursue the study advantageously.

[Monday to Friday, inclusive, 9.00 A. M.—1.00 P. M.]

72 *Research Work in Physiological Chemistry.*

It is desired to make the laboratory useful to advanced students and other persons who have shown the necessary qualifications to undertake original investigations independently or under guidance. To those suitably trained opportunity for undertaking research work will be given; and the facilities which the laboratory affords will be placed freely at their disposal. Investigations will be planned with reference to the needs and attainments of the individual. The department has a satisfactory equipment, and is ready to give encouragement to those who wish to become acquainted with the methods and aims of research. To those engaged in this work the laboratory is open during the entire day.

73 *Experimental Physiology.*

3 hrs.

Essentially a laboratory course intended to afford experimental acquaintance with certain departments of physiology, and giving particular attention to general physiological methods. The physiology of muscle and nerve, of the circulation, secretion, etc., is considered in some detail. Other departments are treated in a more elementary manner; a brief survey of the entire field is thus afforded, while certain topics are studied with sufficient thoroughness to give training in technique and methods of demonstration, and an appreciation of the aims and methods of research. Opportunity is also afforded for more advanced work in certain lines of experimental physiology.

[Saturday, 9.00 A. M.—1.00 P. M.]

74 *Physiological Seminary.*

2 hrs. both terms.

A study of the recent advances in physiology and physiological chemistry is undertaken. The investigations which have led to the establishment of important facts are presented; and informal talks are given on the bearing which recent discoveries in physiology have on existing views. The students are required to prepare reports and reviews of papers appearing in the current German, French, and English physiological literature. For this work the library facilities of the University are satisfactory.

[Wednesday, 4.00—6.00 P. M.]

Professor CHITTENDEN :—

75 *Experimental Toxicology.* 2d half 2d term.

A course of about twenty lectures, with demonstrations on the physiological action of the more important mineral and alkaloidal poisons. This course can be supplemented, if desired, by laboratory work on the chemical reactions of poisons, with a study of the methods of detecting and separating poisons.

[Tuesday, Thursday, and Saturday, 8.15 A. M.]

*76 *Physiology.* 1 hr.

Huxley's *Lessons in Elementary Physiology*, with occasional lectures and illustrative experiments.

[Wednesday, 2.00 P. M., B. L.]

*77 *Physiological Chemistry.* (Shorter course.) 2½ hrs.

Two exercises a week, of a minimum of two and a half hours each, in the laboratory of physiological chemistry. The time is devoted mainly to a study of the chemistry of the connective, contractile, and nervous tissues, of the chemical processes of salivary, gastric, and pancreatic digestions, and so far as the time allows, of other subjects connected with the physiology of nutrition and the chemistry of the excretions.

A laboratory fee is charged for this course. The student in addition must bear the expense of gas, flask, etc., which should not exceed ten dollars.

78 *Physiology of Nutrition.* 3 hrs. 1st half 2d term.

Dr. L. F. RETTGER :—

79 *Bacteriology and Hygiene.* 4 hrs.

A general course in bacteriology and hygiene adapted to those who have had sufficient training in general biology. An elementary knowledge of chemistry is also desirable. Essentially a laboratory course supplemented by lectures. The methods of preparing culture media, the identification and isolation of the different types of bacteria and their deportment under varying conditions, are studied. The course is designed to make the student familiar with bacteriological technique. Opportunities are offered for the study of problems in bacteriology and hygiene which are of special interest to the biological student.

Assistant Professor EVANS:—

*80 *Botany.*

4 hrs., to count as 2 hrs.

An elementary course in the botany of flowering plants. Laboratory work and informal lectures. The plant and its various organs are studied with respect to their form, structure, and functions, and special emphasis is laid on the relationships of a plant to its environment.

[Monday and Wednesday, 9.30–11.20 A. M.]

81 *General Morphology of Plants.*

4 hrs.

Laboratory work and informal lectures. Beginning with the simplest forms, the various groups of plants are taken up in suitable types, and their structure, development, and mode of life are studied and compared. The course is limited to those who show a satisfactory knowledge of the botany of flowering plants.

[Wednesday and Friday, 3.00 P. M.]

82 *Advanced Morphology and Taxonomy of Plants.*

The botanical laboratory is open throughout the year to graduate students, properly qualified, who may wish to pursue advanced studies along some special line in morphological or taxonomic botany. The instruction will be adapted as far as possible to the needs of the individual student.

Dr. DEAN :—

83 *Plant Physiology.*

Opportunity for study in plant physiology is offered to graduate students who have a knowledge of plant morphology and histology. Familiarity with the elements of physics and chemistry is presupposed. Attention is especially directed to the chemical features of vegetable physiology, including the study of the composition of the plant body, plant nutrition, the synthesis of proteids and carbohydrates, the distribution, action, and significance of enzymes, and other features of plant metabolism.

The laboratory will be open for work from 9 A. M. to 1 P. M.

FORESTRY

The following courses given in connection with THE FOREST SCHOOL are open to graduate students.

Professor TOUMEY and Assistants :—

- 84 *Forest Botany.* 1st year, 4 hrs., field work additional.

The instruction in Forest Botany includes informal lectures, laboratory and field work. It is expected that the student taking this course has a general knowledge of the science of Botany, hence the work in Forest Botany may be termed Special Botany, dealing particularly with indigenous trees and shrubs, and herbaceous plants which grow in forests. The course embraces Morphology of Plant Organs, with special attention given to them in their winter condition; Anatomy and Histology, with special attention given to the origin and development of the tissues of woody plants; Physiology, including Ecology and Physiology proper, with particular attention given to environmental factors influencing the growth of woody plants and forest herbs; and Taxonomy, with special attention given to identification and classification of the trees and shrubs, and the forest herbs indigenous about New Haven. The work in Ecology and Taxonomy is largely based upon field work, weekly excursions being given throughout the year, except in midwinter.

Professor BREWER :—

- 85 *Meteorology and Forest Physiography.* 4 hrs. 1st half 2d term.

General conditions necessary to forests; elementary meteorology; forests as related to temperature and its range; to rainfall and its range; to excesses of weather and climate; to the mechanical and chemical nature of soil and ground-water; to the geological character of the surface; to the relief-forms of the land; to other geographical features; the geographical distribution of forests: the aspects of forests as related to climate and topography; the geological history of forests; forests in relation to public health, and the relations of forest physiography to history and civilization.

Mr. AKERMAN :—

86 *Introduction to Forestry.*

2 hrs.

This course is designed to give a comprehensive view of Forestry with special reference to its economic aspects. It considers the purpose and scope of Forestry, its importance in national economy, the indirect influence of forests, the relation of the State to forests and Forestry, the need for Forestry and its practice in the United States. It is recommended to undergraduates who desire a knowledge of the nature of Forestry with the view of possibly entering the profession.

[Wednesday and Friday, 10.30 A. M., 112 Winchester Hall.]

Professor GRAVES and Mr. AKERMAN :—

87 *Silviculture.* 1st year, 3 hrs., field work additional.

Characteristics of forests ; the forests of the world ; forest regions of the United States ; special consideration of trees important in Forestry ; methods of research work in Silviculture ; methods of reproducing forests naturally ; thinnings and other kinds of improvement cuttings.

Forest planting will be taught in the spring term by Professor Toumey. Attention will also be given to the planting and care of trees in streets and parks for ornament and shade, with notes as to the relative suitability of different trees to these uses.

The field work in the fall term is devoted to practice in making forest descriptions and to field studies of the habits and characteristics of local species near New Haven. During the winter term the students are given practice in making reproduction cuttings and all kinds of improvement thinnings. The field work in Silviculture during the spring term is devoted to nursery practice and forest planting.

Mr. BOWERS :—

88 *Forest Administration and Law.* 1 hr. 1st half 2d term.

The development of the public domain with reference to the creation of a forest policy by the United States and a consideration of laws relating thereto, including rules and regulations governing public lands, forest reserves and national parks.

Special consideration of the laws and decisions of the Federal and State Courts with reference to timber trespass, river driving, riparian rights, damages resulting from forest fires, etc.

Mr. GRAVES :—

89 *History of Forestry.* 1 hr. 1st term, and 1st half 2d term.

Rise of Forestry abroad and in the United States. Present practice of Forestry in foreign countries.

VII. MATHEMATICS

J. WILLARD GIBBS, Ph.D., LL.D.	CHARLES B. RICHARDS, M.A.
EUGENE L. RICHARDS, M.A.	A. JAY DUBOIS, Ph.D.
WILLIAM BEEBE, M.A.	ANDREW W. PHILLIPS, Ph.D.
JAMES PIERPONT, Ph.D.	PERCEY F. SMITH, Ph.D.
SAMUEL E. BARNEY, C.E.	HENRY A. BUMSTEAD, Ph.D.
WILLIAM A. GRANVILLE, Ph.D.	HERBERT E. HAWKES, Ph.D.
EARLE R. HEDRICK, Ph.D.	EDWIN B. WILSON, Ph.D.
ARTHUR S. GALE, Ph.D.	

Connected with the department are the Seminary rooms, the Mathematical Laboratory, the Collection of Models, the Mathematical Club, the Engineers' Club.

The SEMINARY ROOMS, which are at 90 High street, may be used by all students in mathematics. The seminary rooms afford a place for students to meet for the discussion of mathematical questions, and study. There is a good departmental reference library, and also a collection of drawings and models made by students of previous years illustrating various theories. Many of the lectures in this department of past years have been reported and are here to be found bound and ready for consultation.

The MATHEMATICAL LABORATORY occupies a commodious room on the floor below the seminary rooms. It is well equipped with tools and drawing instruments necessary to construct mathematical models. Students are given direction and advice for the proper and expeditious construction of models more or less elaborate, illustrating the subjects they are studying. Such models and drawings serve to develop the student's geometrical intuition as well as to make more clear the particular theory in hand. Students who expect to become teachers will find the laboratory most useful in acquiring facility in preparing simple models to illustrate subjects they may later have to teach.

The COLLECTION OF MATHEMATICAL MODELS is one of the most extensive in the country, and is constantly growing. Besides a very complete selection of plaster and thread models from Brill and Schilling, etc., the collection contains a large number of models illustrating the teaching of solid geometry, the theory of equations, and various kinematical principles, as well as the theory of twisted curves and surfaces which have been made under the direction of instructors of the department.

The MATHEMATICAL CLUB holds fortnightly meetings, at which are presented summaries of articles in current periodicals and recent works on pure and applied mathematics, descriptions and models of new apparatus, also papers containing the results of the original investigations of the instructors and advanced students in this department. All students are encouraged to prepare papers which, while not original, give a comprehensive survey of some field of mathematics, or treat from a new standpoint some question of general interest to the members of the club.

The ENGINEERS' CLUB meets monthly in North Sheffield Hall for the reading and discussion of papers on subjects relating to the different branches of engineering.

Lectures are occasionally given before the club by professional experts.

PURE MATHEMATICS

Professor GIBBS :—

1 *Vector Analysis.*

2 hrs.

In the first part of this course the simpler problems of geometry, kinematics, and mechanics are treated by vector methods. The matter taught is not entirely unlike that usually given in courses in quaternions, but the method followed is in some respects nearer to Grassmann's than to Hamilton's. The same method is then applied to differentiation with respect to position in space, the theory of the potential and allied functions, and that of linear vector functions. This course is especially designed as an introduction to the study of mathematical physics.

[Tuesday and Thursday, 3.00 P. M., Sloane Laboratory.]

2 *Multiple Algebra.* 1 hr.

The object of this course is to give some idea of the methods and results of the principal non-arithmetical algebras, especially of the *Ausdehnungslehre* and the algebra of matrices. It is intended for such students as have already some familiarity with the algebra of vectors, derived from the preceding course or from the study of quaternions.

[Wednesday, 3.00 P. M., Sloane Laboratory.]

3 *Electricity and Magnetism.* 1 hr.

In this course, which is based on Maxwell's theory, the student is taught the use of vector methods in this branch of physics.

[Wednesday, 5.00 P. M., Sloane Laboratory.]

4 *Thermodynamics and Properties of Matter.* 2 hrs.

This course is a development of the consequences of the two fundamental laws of thermodynamics, as affording a general theory of physical and chemical equilibrium, and as giving shape to the investigation of the sensible properties of matter.

[Monday and Friday, 5.00 P. M., Sloane Laboratory.]

In the year 1904-1905, in addition to course 1 in vector analysis, the following may be expected :

[5 *Miscellaneous Applications of Vector Analysis.* 1 hr.

These applications are to such subjects as the theory of curvature, surfaces of the second degree, the motion of a rigid body, and the fundamental principles of hydrodynamics.

Omitted in 1903-1904.]

[6 *Electro-magnetic Theory of Light.* 2 hrs.

This course commences with the general theory of harmonic motion and its representation by complex scalar and vector quantities. The laws of electrodynamics are then applied to the phenomena of the propagation of light in isotropic and æolotropic media, and its reflection at a surface between two such media, including the case of an absorbent medium, and the dispersion of colors.

Omitted in 1903-1904.]

MINERALOGY.

Professor PENFIELD :—

35 *Determinative Mineralogy.* 3 hrs.

The object of this course is to gain familiarity with the common minerals together with facility in their identification. The subject is treated mainly from a chemical standpoint, and it is assumed that all who take the course have some familiarity with the principles of elementary chemistry. A portion of the time allotted to the course (about one quarter) is devoted to the study of simple chemical reactions performed both in the dry way with the aid of the blowpipe and in the wet way with reagents, and such tests are subsequently made the basis of the determination of mineral species. The mineralogical laboratory is open daily from 9-1 and (Saturdays excepted) from 2-5, and by devoting more than the allotted time to the subject the course may be extended to any desired extent.

[Wednesday, 2.00-5.00 P. M., or Saturday, 9.00 A. M.-12.00 M.]

36 *Crystallography and Descriptive Mineralogy.*

2 hrs. 1st half of 2d term, 3 hrs. 2d half of 2d term.

These two subjects are treated together, a group or class of crystals being first studied and then the mineral compounds belonging to that class. Instruction is given by means of lectures and practical demonstrations, the varieties of form and development of crystals being illustrated by means of glass and wooden models and a collection of natural crystals, while in descriptive mineralogy specimens from the valuable and extensive Brush Collection are studied.

For the benefit of those who can devote but one hour a week to these subjects a course similar to the above, but necessarily abridged, is given each year, it being supposed that those who take the shortened course will be able to supplement it by reading and study so as to make it practically an equivalent to the longer one.

[Monday and Tuesday, 3.00-4.00 P. M., and during 2d half of 2d term, Saturday, 9.15-10.15 A. M. Abridged course, Wednesday, 5.00-6.00 P. M. throughout the year.]

37 *Experimental Work in Crystallography.* Daily.

The chief features of this course are the measurement of the angles of crystals with the reflection goniometer; the determination of symmetry; the plotting of the forms of crystals in the stereographic and linear projections; the calculation of axial ratios of crystals and of the symbols of their faces; and the drawing of crystal forms and combinations. For an elementary course, including a few examples in each of the six systems, a practical exercise (3 hrs.) once a week throughout the year is generally sufficient; the course may be lengthened and varied, however, to almost any desired extent. A knowledge of plane trigonometry is indispensable, and some experience in mechanical drawing is most desirable.

38 *Experimental Work in the Optical Properties of Crystals.* Daily.

In this course the optical properties of crystals are studied and determined. Students learn to use the refractometer, total reflectometer, polariscope, polarizing microscope, axial angle apparatus and other optical appliances. A knowledge of optics is indispensable.

39 *Original Investigation in Mineralogy and Crystallography.*

Those who are sufficiently advanced may undertake research work in mineralogy and crystallography. Such work may be along the lines of analytical chemistry for determining the composition of minerals, or the crystallographic and optical properties of minerals may be studied. Material for investigation is available from the Brush Collection and the University Mineral Cabinet.

Mr. FORD :—

40 *Ore Deposits.* 1 hr. 2d half of 2d term.

A short course of lectures of an elementary nature. Emphasis is laid on the principles of ore deposition and short descriptions are given of the typical and important ore deposits of North America. The course is illustrated by lantern slides and by specimens taken from the ore collection of the Sheffield Scientific School. A knowledge of elementary mineralogy and geology is desirable.

PETROLOGY

Professor PIRSSON :—

41 *Petrology.*

Daily, 9 A. M. to 1 P. M.

(a) Study and determination of the rock-making minerals by optical and chemical methods. Includes the use of the petrological microscope.

(b) History, origin, and classification of rocks, commencing with igneous types and passing into the crystalline schists, during which metasomatic and dynamic changes, including effects of dynamo-metamorphism, are taken up. The work is carried on mostly in the laboratory, with access to collections both of rocks and thin sections.

(c) Original investigation. In sequence to (a) and (b) some special object or locality may be made the subject of investigation. The work requires laboratory methods of determination, both chemical and microscopical, with consultation of the literature and occasionally work in the field. A large amount of material is available in the petrologic collections of the Sheffield Scientific School.

Only those whose previous training in mineralogy and geology has been sufficient to enable them to pursue the subject advantageously are admitted to this course.

42 *Elementary Petrology.*

1 hr. 1st half of 2d term.

A series of lectures of an elementary nature, and without the use of the microscope, on the history, origin, and classification of rocks with especial reference to their geologic relations and economic properties. Illustrated by collections.

[Hours to be arranged.]

GEOLOGY

Professor PIRSSON :—

*43 *Elementary Structural and Dynamical Geology.*

3 hrs. 1st half-year.

This course in Geology is given partly by lectures and partly by recitations with the use of a text-book. It includes the elements of structural and dynamical geology, and these subjects are illustrated by maps, diagrams, photographs and specimens. The course is especially designed as an introduction to more extended geological studies, and may be followed advantageously by course 44.

Professor BEECHER :—

- *44 *Historical Geology.* 3 hrs. 2d half-term.

The sequence and distribution of the sedimentary formations are studied, together with the introduction and succession of the various types of life during past geological ages. Suitable collections of fossils are used to illustrate the subject. This course should follow 43.

Assistant Professor GREGORY :—

- *45 *General Geology.* 2 hrs.

A course of lectures on the general principles of the science of geology. Such topics will be discussed as will give an understanding of the structural features of the earth and of the forces by which its present condition has been attained. The lectures will be supplemented by the use of a text-book and illustrated by specimens and lantern views. Optional excursions to points of geologic interest will be arranged.

Asst. Profs. GREGORY and BARRELL and Mr. ROBINSON :—

- *46 *Geology, with field and laboratory work.* 3 hrs.

This course will include the exercises of course 43, General Geology, and in addition field and laboratory work will be assigned to average two hours per week. The laboratory work will consist of the study of important minerals and fossils; the field work will include geologic mapping and excursions. [Students who take this course must leave Monday or Tuesday afternoon free from 2.00-5.00.]

Mr. H. H. ROBINSON :—

- 47 *Field Geology.* 6 hrs., to count as 3 hrs.

The course will consist of field work upon selected areas in the vicinity of New Haven, supplemented by lectures and laboratory exercises upon the construction and use of topographic and geologic maps.

Assistant Professor GREGORY :—

- 48 *Geology of Connecticut.*

A study of some problem connected with the physical geology of Connecticut. The work will be carried on in connection

with the United States Geological Survey and in every case a written report will be required. This report may be presented as a thesis for an advanced degree.

*49 *Physiography.* 2 hrs.

A study of the origin, development and classification of land forms followed by a study of the physiography of the United States. The exercises will include lectures, field excursions, the reading of topographic maps and of geologic literature.

50 *Physiography.*

The origin, development and classification of land forms, as illustrated by some area selected for special study.

Assistant Professor BARRELL :—

52 *Dynamical and Structural Geology.* 3 hrs.

An advanced course consisting of studies on the nature of geological agencies operating within the crust of the earth and their effects. Subjects are taken up as : the causes and nature of joints, faults, folds, fissure veins, metamorphism, mountains and igneous intrusions. The exercises will consist of lectures, the study of geological literature and field and laboratory problems. [Students who take this course must leave Wednesday or Thursday afternoon from 2.00–5.00, as these afternoons will occasionally be submitted for the regular class hour.]

[Monday and Wednesday, 11.30 A. M.]

53 *Dynamical and Structural Geology.*

A study of folds, faults, views, metamorphism, mountain making, etc. for those who wish to specialize in geology. Problems for investigation will be assigned with a view toward the preparation of theses for advanced degrees. A knowledge of petrography is required.

Mr. TARR :—

54 *Meteorology.*

This course will include studies of the general circulation of the winds ; the development of storms ; storm tracks and their effect on climate ; thermodynamics of the atmosphere ; methods of forecasting the weather. The instruments, records and charts of the United States Weather Bureau office will be available for research work.

Professor H. S. WILLIAMS :—

2 hrs.

55 *Historical Geology.*

Elementary study of geological formations and of the principles of their classification and correlation by fossils, consisting chiefly of laboratory study of collections, reading of geological literature and the preparation of scientific papers.

56 *Faunal Paleontology.*

Daily.

A special study of fossil faunas, their composition, relations to conditions of environment, origin, geographical distribution and succession in time. The Laboratory of Devonian Paleontology of the United States Geological Survey is available for illustration, as well as the collections in the Peabody Museum. This course is specially intended for men preparing for practical geological survey work, for whom opportunity for summer practice may be arranged.

*57 *Organic Evolution.*

2 hrs.

An elementary lecture course on evolution, supplemented by study and discussion of Darwin's *Origin of Species*, and other theories of evolution.

PALEONTOLOGY

Professor BEECHER :—

58 *General Invertebrate Paleontology.* 2 hrs. 1st term.

An elementary course, including the careful study in the laboratory of characteristic genera representing the principal orders of fossil invertebrates.

59 *Invertebrate Paleontology (Special).*

Systematic study of the structure, development, and affinities of one or more classes of fossil animals. In the laboratory work, attention is given to modern methods of preparation and preservation of specimens.

60 *Original Investigation in Invertebrate Paleontology.*

Following 58 and 59, opportunity is given to take up some special subject for investigation and the discovery of facts new to science.

The requisite material is available in the extensive collections of the Peabody Museum.

The work in these courses (58-60) necessitates the frequent consultation of memoirs and scientific reports, occasional field-work, the use of the microscope, the preparation of thin sections, and other methods employed in thorough investigations.

61 *Organic Evolution.* 1st half-year.

Practical illustration of the methods used in modern researches, and the principles governing the classification of organisms.

Courses 59-61 are open to those who have had some previous knowledge of geology and zoology. Course 59: laboratory work 4 hours per week. Courses 59-61 : laboratory work three days per week, 2.00-5.00 P. M. Courses 59 and 60 will require about two hours of lectures and two hours in the laboratory each week. Other hours and divisions of work may be arranged to suit the convenience of students.

BIOLOGY

Professor VERRILL :—

62 *Zoology.*

Laboratory practice, recitations, readings, and lectures. The laboratory work is varied according to circumstances, in order to accommodate, as far as possible, those students who wish to pursue special branches. Most of the time is devoted to comparative anatomy, morphology, histology, and systematic zoology. Ample collections in the Peabody Museum, representing all classes of animals, are available for instruction, while the proximity to the sea makes it easy to provide fresh or living examples of most classes of marine animals for study and dissection.

Excursions may be arranged, when desirable, for the study of marine animals in their natural surroundings, on the adjacent sea coasts, and for making collections. Occasionally parties of advanced students have been taken to the coral-reefs of the Bermuda islands for these purposes. Extensive collections of insects are available for the study of Economic Entomology.

Professor S. I. SMITH and Assistant Professor COE :—

*63 *General Biology.* 3 hrs.

*64 *Comparative Anatomy and General Biology.* 6 hrs. 2d term.

65 *Comparative Anatomy and General Biology.*

Graduate students who have had sufficient elementary training are received in the Sheffield Biological Laboratory, and are provided with special advanced courses of instruction adapted as far as possible to the particular wants of the individual student. Such courses may cover either or both terms, and require at least three hours of laboratory work per day for two or more days each week. To such students the laboratory is open five days a week

66 *Morphology and Embryology of Vertebrates.*

1st half 2d term.

A course of about twenty exercises of two hours each, consisting of lectures and demonstrations with laboratory work. The classification of vertebrate animals, and the comparative morphology of the different sets of organs in the various groups, is first discussed with special reference to human morphology. Then the development, fertilization and cleavage of the egg, and the formation of the germ layers, tissues and organs of the vertebrate body are taken up in order. The course may be supplemented, if desired, by more extended practical work in the laboratory.

Assistant Professor COE :—

67 *Biology of the Cell.*

A general course in Cytology, consisting of laboratory work supplemented by informal lectures, on the structure and manifestations of the animal cell, with special attention to maturation, fertilization, and cleavage of the ovum. The subject is treated with reference to its bearing on the problems connected with the phenomena of growth, heredity and evolution. The course will include the practical study of protoplasmic structure and movement, various types of cells with resting nuclei, cell-division, conjugation in unicellular animals, structure of spermary and development of spermatozoa, ovary and development of the ovum, fertilization, parthenogenesis, types of cleavage, and formation of primary layers of the embryo. Considerable attention is given to the technique of the subject, and to experimental embryology.

68 *General Embryology.*

Laboratory work and informal lectures on the development of certain types of invertebrates, followed by a similar study of the elementary principles of vertebrate embryology.

In addition to the above, special courses may be arranged for either term to meet the requirements of individual students, and such courses may include a study of the later stages of the development of the embryo, with special reference to the vertebrates, and a practical study of the development of the chick.

Dr. EATON :—

69 *Comparative Osteology.*

2 hrs.

An elementary course especially designed as a preparation for the study of Vertebrate Paleontology. Laboratory work in which the most important types of the vertebrate skeleton are studied and compared. Hours will be arranged by the instructor upon consultation.

Professor FERRIS :—

70 *Comparative Morphology of the Vertebrate Brain.* 1 hr.

A course extending through the entire year, consisting principally of dissections and drawings, with some demonstrations and lectures, on the embryology and general morphology of the brain.

Professor CHITTENDEN and Assistant Professor MENDEL :—

71 *Physiological Chemistry.*

Graduate students who have sufficient knowledge of analytical and organic chemistry and elementary physiology are received in the Sheffield Biological Laboratory at the beginning of the academic year, where they can pursue a course in physiological chemistry extending throughout the entire year. The course necessitates, on an average, four hours of laboratory work each day, and attendance at lectures and recitations three or four times each week.

Students who are desirous of studying any special subject in physiological chemistry and have but a limited amount of time are received also, provided they are qualified by previous work to pursue the study advantageously.

[Monday to Friday, inclusive, 9.00 A. M.—1.00 P. M.]

72 *Research Work in Physiological Chemistry.*

It is desired to make the laboratory useful to advanced students and other persons who have shown the necessary qualifications to undertake original investigations independently or under guidance. To those suitably trained opportunity for undertaking research work will be given; and the facilities which the laboratory affords will be placed freely at their disposal. Investigations will be planned with reference to the needs and attainments of the individual. The department has a satisfactory equipment, and is ready to give encouragement to those who wish to become acquainted with the methods and aims of research. To those engaged in this work the laboratory is open during the entire day.

73 *Experimental Physiology.* 3 hrs.

Essentially a laboratory course intended to afford experimental acquaintance with certain departments of physiology, and giving particular attention to general physiological methods. The physiology of muscle and nerve, of the circulation, secretion, etc., is considered in some detail. Other departments are treated in a more elementary manner; a brief survey of the entire field is thus afforded, while certain topics are studied with sufficient thoroughness to give training in technique and methods of demonstration, and an appreciation of the aims and methods of research. Opportunity is also afforded for more advanced work in certain lines of experimental physiology.

[Saturday, 9.00 A. M.—1.00 P. M.]

74 *Physiological Seminary.* 2 hrs. both terms.

A study of the recent advances in physiology and physiological chemistry is undertaken. The investigations which have led to the establishment of important facts are presented; and informal talks are given on the bearing which recent discoveries in physiology have on existing views. The students are required to prepare reports and reviews of papers appearing in the current German, French, and English physiological literature. For this work the library facilities of the University are satisfactory.

[Wednesday, 4.00–6.00 P. M.]

Professor CHITTENDEN :—

75 *Experimental Toxicology.* 2d half 2d term.

A course of about twenty lectures, with demonstrations on the physiological action of the more important mineral and alkaloidal poisons. This course can be supplemented, if desired, by laboratory work on the chemical reactions of poisons, with a study of the methods of detecting and separating poisons.

[Tuesday, Thursday, and Saturday, 8.15 A. M.]

*76 *Physiology.* 1 hr.

Huxley's *Lessons in Elementary Physiology*, with occasional lectures and illustrative experiments.

[Wednesday, 2.00 P. M., B. L.]

*77 *Physiological Chemistry.* (Shorter course.) 2½ hrs.

Two exercises a week, of a minimum of two and a half hours each, in the laboratory of physiological chemistry. The time is devoted mainly to a study of the chemistry of the connective, contractile, and nervous tissues, of the chemical processes of salivary, gastric, and pancreatic digestions, and so far as the time allows, of other subjects connected with the physiology of nutrition and the chemistry of the excretions.

A laboratory fee is charged for this course. The student in addition must bear the expense of gas, flask, etc., which should not exceed ten dollars.

78 *Physiology of Nutrition.* 3 hrs. 1st half 2d term.

Dr. L. F. RETTGER :—

79 *Bacteriology and Hygiene.* 4 hrs.

A general course in bacteriology and hygiene adapted to those who have had sufficient training in general biology. An elementary knowledge of chemistry is also desirable. Essentially a laboratory course supplemented by lectures. The methods of preparing culture media, the identification and isolation of the different types of bacteria and their deportment under varying conditions, are studied. The course is designed to make the student familiar with bacteriological technique. Opportunities are offered for the study of problems in bacteriology and hygiene which are of special interest to the biological student.

Assistant Professor EVANS:—

*80 *Botany.*

4 hrs., to count as 2 hrs.

An elementary course in the botany of flowering plants. Laboratory work and informal lectures. The plant and its various organs are studied with respect to their form, structure, and functions, and special emphasis is laid on the relationships of a plant to its environment.

[Monday and Wednesday, 9.30–11.20 A. M.]

81 *General Morphology of Plants.*

4 hrs.

Laboratory work and informal lectures. Beginning with the simplest forms, the various groups of plants are taken up in suitable types, and their structure, development, and mode of life are studied and compared. The course is limited to those who show a satisfactory knowledge of the botany of flowering plants.

[Wednesday and Friday, 3.00 P. M.]

82 *Advanced Morphology and Taxonomy of Plants.*

The botanical laboratory is open throughout the year to graduate students, properly qualified, who may wish to pursue advanced studies along some special line in morphological or taxonomic botany. The instruction will be adapted as far as possible to the needs of the individual student.

Dr. DEAN:—

83 *Plant Physiology.*

Opportunity for study in plant physiology is offered to graduate students who have a knowledge of plant morphology and histology. Familiarity with the elements of physics and chemistry is presupposed. Attention is especially directed to the chemical features of vegetable physiology, including the study of the composition of the plant body, plant nutrition, the synthesis of proteids and carbohydrates, the distribution, action, and significance of enzymes, and other features of plant metabolism.

The laboratory will be open for work from 9 A. M. to 1 P. M.

FORESTRY

The following courses given in connection with THE FOREST SCHOOL are open to graduate students.

Professor TOUMEY and Assistants :—

- 84 *Forest Botany.* 1st year, 4 hrs., field work additional.

The instruction in Forest Botany includes informal lectures, laboratory and field work. It is expected that the student taking this course has a general knowledge of the science of Botany, hence the work in Forest Botany may be termed Special Botany, dealing particularly with indigenous trees and shrubs, and herbaceous plants which grow in forests. The course embraces Morphology of Plant Organs, with special attention given to them in their winter condition; Anatomy and Histology, with special attention given to the origin and development of the tissues of woody plants; Physiology, including Ecology and Physiology proper, with particular attention given to environmental factors influencing the growth of woody plants and forest herbs; and Taxonomy, with special attention given to identification and classification of the trees and shrubs, and the forest herbs indigenous about New Haven. The work in Ecology and Taxonomy is largely based upon field work, weekly excursions being given throughout the year, except in midwinter.

Professor BREWER :—

- 85 *Meteorology and Forest Physiography.* 4 hrs. 1st half 2d term.

General conditions necessary to forests; elementary meteorology; forests as related to temperature and its range; to rainfall and its range; to excesses of weather and climate; to the mechanical and chemical nature of soil and ground-water; to the geological character of the surface; to the relief-forms of the land; to other geographical features; the geographical distribution of forests; the aspects of forests as related to climate and topography; the geological history of forests; forests in relation to public health, and the relations of forest physiography to history and civilization.

Mr. AKERMAN :—

86 *Introduction to Forestry.* 2 hrs.

This course is designed to give a comprehensive view of Forestry with special reference to its economic aspects. It considers the purpose and scope of Forestry, its importance in national economy, the indirect influence of forests, the relation of the State to forests and Forestry, the need for Forestry and its practice in the United States. It is recommended to undergraduates who desire a knowledge of the nature of Forestry with the view of possibly entering the profession.

[Wednesday and Friday, 10.30 A. M., 112 Winchester Hall.]

Professor GRAVES and Mr. AKERMAN :—

87 *Silviculture.* 1st year, 3 hrs., field work additional.

Characteristics of forests; the forests of the world; forest regions of the United States; special consideration of trees important in Forestry; methods of research work in Silviculture; methods of reproducing forests naturally; thinnings and other kinds of improvement cuttings.

Forest planting will be taught in the spring term by Professor Toumey. Attention will also be given to the planting and care of trees in streets and parks for ornament and shade, with notes as to the relative suitability of different trees to these uses.

The field work in the fall term is devoted to practice in making forest descriptions and to field studies of the habits and characteristics of local species near New Haven. During the winter term the students are given practice in making reproduction cuttings and all kinds of improvement thinnings. The field work in Silviculture during the spring term is devoted to nursery practice and forest planting.

Mr. BOWERS :—

88 *Forest Administration and Law.* 1 hr. 1st half 2d term.

The development of the public domain with reference to the creation of a forest policy by the United States and a consideration of laws relating thereto, including rules and regulations governing public lands, forest reserves and national parks.

Special consideration of the laws and decisions of the Federal and State Courts with reference to timber trespass, river driving, riparian rights, damages resulting from forest fires, etc.

ORGAN RECITALS: by Professor Jepson in the Battell Chapel on Monday afternoons in the Winter term.

Other public lectures are arranged for by the Phi Beta Kappa Society, the Medical Alumni, the Kent Club of the Law School, the Leonard Bacon Club of the Theological School, and other university organizations.

THE UNIVERSITY CHURCH

The privileges of THE CHURCH OF CHRIST IN YALE UNIVERSITY are extended to all students of the University.

PUBLIC WORSHIP is held in the BATTELL CHAPEL every Sunday morning at 10.30 o'clock. The preachers for the year 1902-03 are as follows :

- Sept. 28. President Hadley.
- Oct. 5. Rev. Lyman Abbott, D.D., New York City.
12. Rev. Charles E. Jefferson, D.D., New York City.
19. Rev. Professor Henry Van Dyke, D.D., LL.D., Princeton University.
26. Rev. George A. Gordon, D.D., Boston, Mass.
- Nov. 2. Rev. Professor Benjamin W. Bacon, Litt.D., D.D., Yale University.
9. Rev. Albert J. Lyman, D.D., Brooklyn, N. Y.
16. Rev. Alexander McKenzie, D.D., Cambridge, Mass.
23. Mr. Robert E. Speer, M.A., New York City.
30. Rev. George Hodges, D.D., LL.D., Cambridge, Mass.
- Dec. 7. Rev. Joseph H. Twichell, M.A., Hartford, Conn.
14. Rev. H. Parkes Cadman, D.D., Brooklyn, N. Y.
- Jan. 11. Rev. President Henry Hopkins, D.D., Williams College.
18. Rev. Professor Francis G. Peabody, D.D., Harvard University.
25. Rt. Rev. Henry Codman Potter, D.D., LL.D., New York City.
- Feb. 1. Rev. James G. K. McClure, D.D., Lake Forest, Ill.
8. Rev. Amory H. Bradford, D.D., Montclair, N. J.
15. Mr. John R. Mott, M.A., New York City.
22. Rev. William R. Huntington, D.D., New York City.

- Mch. 1. Rev. President Andrew V. Raymond, D.D., Union University.
8. Rev. William O. McDowell, Ph.D., D.D., New York City.
15. Rev. William S. Rainsford, D.D., New York City.
22. Rev. Donald Sage Mackay, D.D., New York City.
29. Professor George H. Palmer, LL.D., Harvard University.
- Apr. 19. Rev. Edward Everett Hale, D.D., LL.D., Boston, Mass.
26. Rev. Professor J. S. Riggs, D.D., Auburn Theological Seminary.
- May 3. Rev. President William DeWitt Hyde, D.D., LL.D., Bowdoin College.
10. Rev. H. P. Dewey, D.D., Brooklyn, N. Y.
17. Rt. Rev. William Lawrence, D.D., Boston, Mass.
24. Rev. President George Harris, D.D., LL.D., Amherst College.
31. Rev. President William H. P. Faunce, D.D., LL.D., Brown University.
- June 7. Rev. William R. Richards, D.D., New York City.
14. Rev. President Charles Cuthbert Hall, D.D., Union Theological Seminary.
21. President Hadley.
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YOUNG MEN'S CHRISTIAN ASSOCIATION

The YOUNG MEN'S CHRISTIAN ASSOCIATION OF YALE UNIVERSITY is composed of six independently organized Associations in the Academic, Scientific, Graduate, Theological, Law, and Medical Departments of the University. The headquarters of the Association in the Graduate School are in Dwight Hall, on the College Square, which is admirably adapted to be a center of social religious life. The building contains a convenient reading-room, a carefully selected library, an auditorium for general religious services, separate rooms for the Bible classes and prayer meetings.

The activities of the Association in the Graduate School include aid for new students in securing board and rooms, a social reception in the early autumn, and informal social

gatherings on Saturday evenings throughout the year, a Bible class on Sunday noons, and practical Christian work in the missions, Sunday schools, and Boys' Clubs which are controlled by the University.

READING ROOM FOR WOMEN STUDENTS

A reading room at 135 Elm street, in charge of the WOMAN'S GRADUATE CLUB, is open to all women studying in the University.

On September 24-27, a member of the Club will be at 135 Elm street from 11.00 A. M. to 1.00 P. M. and from 3.00 to 5.00 P. M., for the purpose of rendering any possible service to the new students.

THE INFIRMARY

The YALE INFIRMARY is situated on Prospect street in a healthful and beautiful part of the city. It was built in 1892 at a cost of about \$40,000. One dollar is charged on the Treasurer's bill for each day that a student remains in the Infirmary. A competent matron is in residence, but the choice of physician rests with the patient.

THE GYMNASIUM

The GYMNASIUM is designed to provide all students of the University, not only with opportunities for general exercise, but also with the means of caring for the body in accordance with the laws of hygiene. It also provides for specific training in view of any physical defects that may be remedied by rational superintendence.

The Department is under the supervision of a Director, assisted by two Associate Directors, both of whom are trained physicians.

THE DINING HALL

The UNIVERSITY COMMONS, in University Hall, furnishes board at cost (approximating \$4.00 per week). The Hall contains seats for 1,008, and is open to the officers and students of the University. Application for board should be made at the office of the superintendent, Mr. F. T. Deshon, at the east end of University Hall.

GRADUATE SCHOOL

LIST OF STUDENTS

IN ATTENDANCE 1902-1903
WITH THEIR MAJOR SUBJECTS OF STUDY

[The major subject of study is stated in each case. Students marked "A." are pursuing courses of study in absence under the direction of the Faculty for the degree of Master of Arts, Mechanical Engineer, or Civil Engineer.]

Elizabeth Frances Abbe, B.A. Wellesley College 1883, M.A. 1896	<i>Dorchester, Mass.</i> 222 Sherman av. Greek
Yoshibumi Abe, B.A. Missouri Valley College 1899. B.D. Cumberland University 1902	<i>Tsuruoka Yamagata, Japan</i> 691 W. D. Philosophy
George Ferdinand Abel, B.A. Pennsylvania College 1897. B.D. Yale University 1900	<i>Philadelphia, Pa.</i> 647 E. D. Philosophy
Arthur Adams, B.A. Rutgers College 1902	<i>Ocean City, N. J.</i> 65 York sq. English
John Chester Adams, B.A. Yale University 1896, M.A. 1898	<i>New Haven, Conn.</i> 75 Mansfield st. English
Walter Maxwell Adriance, B.A. Yale University 1900	<i>St. Louis, Mo.</i> 387 Temple st. Economics
Hubert Hillary Suffern Aimes, PH.B. Yale University 1897	<i>West Haven, Conn.</i> West Haven History
Carroll Storrs Alden, B.A. Yale University 1898, M.A. 1901	<i>Chicago, Ill.</i> 139 Dwight st. English
Mary Adèle Allen, B.A. Smith College 1896	<i>Holyoke, Mass.</i> 83 Grove st. Greek
May Alice Allen, B.A. Smith College 1901	<i>Yarmouthville, Me.</i> 421 George st. Greek
William Gilbert Anderson, M.D. Western Reserve Univ. 1883, B.A. Yale University 1902	<i>Cleveland, O.</i> 120 College st. Biology
William Irving Andruss, B. A. Beloit College 1896	<i>Amboy, Ill.</i> 333 Crown st. Music and English

Addison Clark Angus, B.A. Yale University 1901	<i>Oakham, Mass.</i> Physical Science	Gymnasium
John Appleton, B.A. Bowdoin College 1902	<i>Bangor, Me.</i> Botany	78 Lake pl.
Der Mahdesian Gabriel Arshag, B.A. Euphrates College 1896	<i>Harpoon, Turkey</i> English	95 Goffe st.
Herbert Bassett Augur, B.A. Yale University 1897	<i>Portland, Oregon</i> History	A.
Edward Monroe Bailey, Jr., PH.B. Yale University 1902	<i>Middletown, Conn.</i> Chemistry	297 York st.
George Merrick Baker, B.A. Yale University 1900	<i>Hartford, Conn.</i> German	126 High st.
Hugh Potter Baker, B.S. Michigan Agr. College 1901	<i>St. Croix, Mich.</i> Botany	78 Lake pl.
Cecil Kittredge Bancroft, B.A. Yale University 1891	<i>Andover, Mass.</i> Classics	213 D.
Julian Thomas Barclay, B.A. Bethany College 1898, M.A. 1902	<i>Bethany, W. Va.</i> Spanish	18 Dwight st.
Arthur Henry Bartlett, B.A. Yale University 1898, M.A. 1900	<i>Plainville, Conn.</i> English	276 Crown st.
Samuel Eliot Bassett, B.A. Yale University 1898	<i>New Haven, Conn.</i> Classical Philosophy	40 Whalley av.
William Henry Bawden, B.A. Columbia University 1893, Union Theol. Seminary 1896	<i>New Haven, Conn.</i> Biblical Literature	185½ Dixwell av.
Hugh Aiken Bayne, B.A. Yale University 1892	<i>New York City</i> History	A.
Grace Alida Beebe, PH.B. Wesleyan University 1901	<i>New Haven, Conn.</i> French	23 Prince st.
Silas Palmer Beebe, B.S. Harvard University 1900, M.S. Yale University 1902	<i>New Haven, Conn.</i> Physiological Chemistry	22 Tilton st.
Mary Kendrick Benedict, B.A. Vassar College 1897	<i>Cincinnati, O.</i> Philosophy	84 Wall st.
Allen Rogers Benham, B.A. University of Minnesota 1900, M.A. 1901	<i>St. Paul, Minn.</i> English	119 Park st.
Gilbert Giddings Benjamin, PH.B. Syracuse University 1899	<i>Buffalo, N. Y.</i> History	685 w. D.

Stephen Alexander Bennett, B.A. Talladega College 1900	<i>Birmingham, Ala.</i> Mathematics	666 W. D.
Henry Davenport Blackwell, B.A. Randolph-Macon College 1890	<i>Bethel Academy, Va.</i> English	3 Sylvan av.
John Charles Blake, B.S. University of Colorado 1901	<i>Boulder, Colo.</i> Chemistry	130 Wall st.
Stanley Francis Blomfield, B.A. Olivet College 1895, B.D. Yale University 1899	<i>Stony Creek, Conn.</i> Biblical Literature	Stony Creek
Harold Cornelius Bradley, B.A. University of California 1900	<i>Berkeley, Cal.</i> Biology	333 York st.
Edward Dudley Bradstreet, B.A. Yale University 1901	<i>Meriden, Conn.</i> Fine Arts	Meriden
Henrietta Foster Brewer, B.A. University of California 1895	<i>Oakland, Cal.</i> Classics	56 Grove st.
John Henry Bridges, B.S. Florida State Agr. Coll. 1902	<i>Barton, Fla.</i> Botany and Mineralogy	299 Norton st.
Howard Stanley Bristol, PH.B. Yale University 1902	<i>Meriden, Conn.</i> Chemistry	333 York st.
Halbert Hains Britan, B.A. Hanover College 1898	<i>Hanover, Ind.</i> Philosophy	1136 Chapel st.
Wilton Everett Britton, B.S. New Hampshire College Agric. 1893	<i>New Haven, Conn.</i> Botany	1317 Boulevard
Ormus LeRoy Brockett, B.S. Tarkio College 1900	<i>Tarkio, Mo.</i> Economics	144 Dwight st.
Zula Marie Brockett, B.S. Tarkio College 1900	<i>Tarkio, Mo.</i> English	131 Howe st.
Howard Logan Bronson, B.A. Yale University 1900	<i>New Haven, Conn.</i> Physics	1233 Chapel st.
Albert Turney Brown, PH.B. Yale University 1902	<i>Fairfield, Conn.</i> Mechanical Engineering	122 Wall st.
Earle Wayne Brown, PH.B. Yale University 1902	<i>Comstock's Bridge, Conn.</i> Mechanical Engineering	122 Wall st.
Herbert Stanley Brown, B.A. Yale University 1881, B.D. 1886	<i>Darien, Conn.</i> Biblical Literature	Darien
Horatio Jones Brown, B.A. Union University 1901	<i>Schenectady, N. Y.</i> Botany and Mineralogy	182 Mansfield st.
James Brown, B.A. Yale University 1902	<i>Buffalo, N. Y.</i> Chemistry	434 FW.

Lester Dorman Brown, B.A. University of Wooster 1894	Wooster, O.	373 Crown st. Greek
Lucy Burns, B.A. Vassar College 1902	Brooklyn, N. Y.	1239 Chapel st. English
Katharine Jeannette Bush, PH.D. Yale University 1901	New Haven, Conn.	133 Howe st. Natural Science
George Whitfield Butts, PH.B. Yale University 1902	New York City	152 Grove st. Mechanical Engineering
Marian Dickinson Campbell, B.A. Radcliffe College 1899	Middlefield, Conn.	331 Temple st. English
Henry Seidel Canby, PH.B. Yale University 1899	Wilmington, Del.	701 W. D. English
*Frederic James Carnell, PH.B. Yale University 1900	Bristol, Conn.	344 Elm st. Physics
Edgar Edgecombe Carter, B.A. Bowdoin College 1902	Bath, Me.	104 York sq. Botany and Mineralogy
Otho Granford Cartwright, B.A. Yale University 1893, M.A. 1901	New Haven, Conn.	119 Wall st. American History
Lacey Davis Caskey, B.A. Yale University 1901	Yonkers, N. Y.	Athens, Greece Greek
Gaetano Cavicchia, B.A. French-American College 1902	Newark, N. J.	47 Lake pl. Romance Language
Andrew Burns Chalmers, B.A. Eureka College 1889	New Haven, Conn.	88 E. Pearl st. Philosophy
Walter Lawrence Chamberlain, B.A. Yale University 1902	Springfield, Mass.	933 Elm st. English
Chintas Chen, M.A. University of California 1902	Canton, China	244 Crown st. Mathematics and Economics
Samuel Hopkins Clapp, B.A. Yale University 1901	Pawtucket, R. I.	662 W. D. Chemistry
Alexander Ray Clark, Jr., B.A. Yale University 1895	New York City	A. Economics
Charles Upson Clark, B.A. Yale University 1897	New Haven, Conn.	266 Edgewood av. Latin
John Putnam Clark, M.A. Tufts College 1900	Meriden, Conn.	Meriden English
Elizabeth Whittlesey Cleaveland, PH.B. Chicago University 1902	Lakeville, Conn.	89 Whalley av. English

* Deceased Nov. 15, 1902

Frederick Sears Coe, PH.B. Yale University 1899	Newark, N. J. Mechanical Engineering	A.
William Sloane Coffin, B.A. Yale University 1900	New York City Political and Social Science	A.
Gertrude Poor Cole, B.A. Wellesley College 1901	Peabody, Mass. 551 Orange st. Pedagogics	
George Lucius Collie, B.S. Beloit College 1881, PH.D. Harvard University 1893	Beloit, Wisc. 316 Crown st. Paleontology	
Winfield Hazlitt Collins, B.A. Western Maryland College 1894, M.A. Yale University 1900	Reeds Grove, Md. 254 Crown st. History	
Henry H. Conover, B.S. Rutgers College 1900, M.S. Yale University 1902	New Brunswick, N. J. 120 York st. Mathematics	
Charles Edward Cory, PH.B. Drake University, M.A.	Des Moines, Iowa 800 George st. Philosophy	
William Bronson Cramer, PH.B. Yale University 1902	Ansonia, Conn. 57 Prospect st. Chemistry	
Alfred Miller Cressler, B.A. Yale University 1902	Fort Wayne, Ind. A. English	
Francis Cross, B.A. Yale University 1900	New Haven, Conn. 156 Spring st. Classics	
Edgar Roscoe Cumings, B.A. Union College 1897	Madison, O. 22 Whalley av. Geology and Paleontology	
Robert William Curtis, B.S. Trinity College 1896	Hartford, Conn. Hartford Chemistry	
James Elbert Cutler, B.A. University of Colorado 1900	Boulder, Colo. 373 Crown st. Political and Social Science	
Enid Daniel, B.S. Lebanon Valley College 1900	Philadelphia, Pa. 64 Howe st. Philosophy	
Albert Sargent Davis, B.A. Yale University 1896	New York City A. English	
Carl Willis Davis, B.A. Yale University 1902	Hartford, Conn. A. English	
Clarence Shepard Day, Jr., B.A. Yale University 1896	New York City A. English	
George Parmly Day, B.A. Yale University 1897	New York City A. English	

Sidney Norton Deane, B.A. Yale University 1902	Northfield, N. Y. Classics	148 F.
Justus Gerhard Dettmer, B.A. Yale University 1902	Brooklyn, N. Y. English	A.
Ella Marinda Deyo, B.A. Mt. Holyoke College 1897	Honeoye, N. Y. Greek, Latin	397 Crown st.
Sherwood Owen Dickerman, B.A. Yale University 1896	New Haven, Conn. Classics	267 L.
William Frederick Dickerman, M.A. Florida University 1885, National Normal University 1902	New Haven, Conn. Geology	276 Orange st.
John Casper Diehl, B.A. Yale University 1887	Erie, Pa. Latin	A.
Edward Lewis Dodd, B.A. Western Reserve University 1897, M.A. 1901, M.A. Yale University 1902	Cleveland, O. Mathematics	120 York st.
Loring Holmes Dodd, B.A. Dartmouth College 1900, M.A. Columbia University 1901	New Haven, Conn. English	82 Admiral st.
Samuel Henry Dodson, PH.B. Syracuse University 1900	Syracuse, N. Y. History	22 Whalley av.
Peter Tracy Dondlinger, B.A. National Normal University 1899	Lebanon, O. Social Science	486 Elm st.
Joseph William Dows, B.A. Brown University 1899	Providence, R. I. Pedagogy	Wallingford
Samuel William Dudley, PH.B. Yale University 1900	Westville, Conn. Mechanical Engineering	Westville
Ellen Duncan, B.L. Baylor University 1897, M.L. 1900	Waco, Tex. History	153 Franklin st.
Harold Benjamin Eastman, B.S. Bowdoin College 1902	Portland, Me. Botany	74 Lake pl.
Richard Henry Edwards, B.A. Yale University 1901, M.A. 1902	Lisle, N. Y. Biblical Literature	2 Dwight Hall
Albert Ehr Gott, B.D. Rochester Theological Seminary 1895	New Haven, Conn. Biblical Literature	60 Whalley av.
Morgan Shuit Elmer, PH.B. Yale University 1902	Central Valley, N. Y. Chemistry	57 Prospect st.
Clara Eliza Emerson, B.A. Wellesley College 1891	Beloit, Wisc. English	89 Whalley av.

Sara Anna Emerson, B.A. Boston University 1877	Watertown, Mass. Biblical Literature	79 Howe st.
Charles Telford Erickson, B.A. DePauw University 1891, M.A. 1893, B.D. Boston University 1895	Indianola, Iowa Comparative Religion and Missions	32 Grove st.
Ida Josephine Everett, B.L. Mt. Holyoke College 1893	Norwood, Mass. English Literature	32 Howe st.
Arthur Henry Ralph Fairchild, B.A. University of Toronto 1900	Toronto, Canada Philosophy	7 Library st.
Fred Rogers Fairchild, B.A. Doane College 1898	Crete, Nebr. Economics	373 Crown st.
Hollon Augustine Farr, B.A. Yale University 1896, M.A. 1902	Athol, Mass. German	170 F.
Cassius Asa Fisher, B.A. University of Nebraska 1898, M.A. 1900	Sweden, Nebr. Geology	92 Dwight st.
Charles Paxson Flora, B.A. Yale University 1902	Columbia, Pa. Chemistry	8 Prospect pl.
Joseph Fogelberg, B.A. Bethany College 1899	Lindsborg, Kans. German	128 Wall st.
William Ebenezer Ford, Jr., PH.B. Yale University 1899	New Haven, Conn. Mineralogy	16 Lynwood pl.
Harold Day Foster, B.A. Williams College 1902	Auburndale, Mass. Botany and Mineralogy	104 York sq.
George Levi Fox, B.A. Yale University 1874, LL.B. 1879, M.A. 1885	New Haven, Conn. Classics	7 College st.
Hubert Bruce Fuller, B.A. Columbian University 1900, Yale University 1901	Washington, D. C. History	A.
Stanley Leman Galpin, B.A. Western Reserve University 1901, M.A. Yale University 1902	New Haven, Conn. Romance Languages	77 Mansfield st.
Winifred Stowe Galpin, PH.B. Western Reserve University 1901	New Haven, Conn. Romance Languages	77 Mansfield st.
Arthur James Gammack, B.A. Trinity College, Toronto, 1891, M.A. 1902	West Haven, Conn. Biblical Literature	West Haven
William VanNest Garretson, B.S. Rutgers College 1902	Somerville, N. J. Mathematics	65 York sq.
Milton Stahl Garver, B.A. Western Reserve University 1901, M.A. Yale University 1902	Tiffin, O. Romance Languages	122 Howe st.

Robert Banks Gibson, PH.B. Yale University 1902	<i>New Haven, Conn.</i> 18 Trumbull st. Physiological Chemistry
Fred Macdonald Gilbert, B.A. Yale University 1898	<i>Brooklyn, N. Y.</i> A. Biblical Literature
Ralph Davis Gilbert, B.S. Boston University 1900	<i>Gilead, Conn.</i> Kent Lab'y Chemistry
Edward Franklin Goin, B.A. Fisk University 1898, A.D. Oberlin Theological Seminary	<i>Birmingham, Ala.</i> 34 Foote st. Biblical Literature
Thomas Warrington Gosling, B.A. Yale University 1894	<i>Cincinnati, O.</i> A. English
Arthur Leopold Temple Gould, B.L. Pomona College 1901	<i>Claremont, Cal.</i> 46 Lake pl. Philosophy
Benjamin Spencer Gowen, B.A. Yale University 1901, M.A. 1902	<i>Winchester, Tenn.</i> 486 Elm st. Philosophy
Arthur Harmount Graves, B.A. Yale University 1900	<i>Hartford, Conn.</i> 48 N. S. H. Botany
William Buckhout Greeley, B.L. University of California 1901	<i>Oakland, Cal.</i> 83 Sachem st. Botany and Mineralogy
Anna B. Griffiths, B.A. Vassar College 1901	<i>Yorkville, N. Y.</i> Milford Pedagogy
Albert Edward Gubelmann, B.A. University of Rochester 1897, M.A. 1900, M.A. Yale University 1902	<i>Rochester, N. Y.</i> 12 Broad st. German
Harvey Hugo Guy, B.A. Drake University 1893, M.A. Yale University 1902	<i>Tokyo, Japan</i> 696 W. D. Biblical Literature
Walter Brooke Hadley, B.S. Pacific College 1901	<i>Newberg, Oregon</i> 94 Divine st. Mineralogy
Lars Johan Evald Hallander Nya Elementarskolan, Stockholm, 1891, Upsala University, Sweden, 1893	<i>Sköfde, Sweden</i> 31½ Broadway German
Frank Percival Hamilton, B.A. Colby College 1902	<i>Boston, Mass.</i> 74 Lake pl. Botany and Mineralogy
William Frederick Hamilton, B.A. Yale University 1901	<i>New Haven, Conn.</i> 131 Wash'n av. Philosophy
Austin Morris Harmon, B.A. Williams College 1902	<i>Brockport, N. Y.</i> 213 York st. Greek
John Mitchell Harper, B.A. De Pauw University 1899	<i>Terre Haute, Ind.</i> 613 E. D. Philosophy

Frederick Brown Harrison, PH.B. Yale University 1899	<i>New Haven, Conn.</i> English	83 Grove st.
Isao Hata, B.L. University of Nashville 1899	<i>Buzen, Japan</i> Philosophy	561 Howard av.
Ernest Hausberg, B.A. Yale University 1901	<i>Charles City, Iowa</i> English	A.
Ralph Chipman Hawley, B.A. Amherst College 1901	<i>Amherst, Mass.</i> Botany and Mineralogy	214 Dixwell av.
Aurelia Isabel Henry, B.L. University of California 1898	<i>Berkeley, Cal.</i> English	82 York sq.
George Garr Henry, B.A. Yale University 1901	<i>Washington, D. C.</i> English	A.
Ishiro Hirano, B.A. Keiozizuku University 1902	<i>Tokyo, Japan</i> Economics	373 Crown st.
Yukichi Hokodachi Middle School 1899	<i>Japan</i> Mineralogy	363 Crown st.
Louis Halsey Holden, B.A. Yale University 1895, M.A. Columbia University 1897, B.D. Union Theological Seminary 1898	<i>Waterbury, Conn.</i> Biblical Literature	Waterbury
Lucius Hudson Holt, B.A. Yale University 1902	<i>Hartford, Conn.</i> English	84 Wall st.
Milton Carter Holt, B.A. Acadia College 1898	<i>Crowley, La.</i> Biblical Literature	687 W. D.
May Engstrom Hoss, B.A. Baker University 1889, M.A. University of Kansas 1902	<i>Lawrence, Kans.</i> English	20 Eld st.
Albert Kemp Hubbard, PH.B. Yale University 1901	<i>Kane, Pa.</i> Civil Engineering	113 College st.
Clara Marvin Hubbell, B.A. Smith College 1887	<i>Detroit, Mich.</i> English	409 Orange st.
William Southworth Hunt, B.A. Yale University 1901	<i>Newark, N. J.</i> English	A.
Albert S. Hurst, B.A. Ontario University 1899	<i>Morpeth, Ontario</i> Philosophy	Bridgeport
William Albert Hyde, PH.B. Yale University 1901	<i>North Haven, Conn.</i> Physics	86 Pearl st.
Lola LaMotte Iddings, B.A. Vassar College 1889	<i>Orange, N. J.</i> English	Orange
George Samuel Jamieson, PH.B. Yale University 1901	<i>Bridgeport, Conn.</i> Chemistry	S. L.

- Paul Julius Herman Jente, PH.B. *New Haven, Conn.* 97 Bristol st.
Yale University 1902 Mechanical Engineering
- Wilhelm Julius Edward Jente, B.A. *New Haven, Conn.* 97 Bristol st.
Yale University 1897, M.A. 1902 German
- Carl Wilhelm Johnson, B.A. *Lindsborg, Kans.* 33 Lock st.
Bethany College 1900, German
M.A. Yale University 1902
- Hjalmar Philip Johnson, B.A. *Lindsborg, Kans.* 174 Bradley st.
Bethany College 1901 English
- William Savage Johnson, B.A. *Meriden, Conn.* 311 York st.
Yale University 1900 English
- Eva Soule Jones, B.A. *New Haven, Conn.* 387 Edgewood av.
Wells College 1897 English
- Frank Oscar Jones, B.A. *New Haven, Conn.* 387 Edgewood av.
Brown University 1897 Philosophy
- Arthur Brown Joy, B.A. *Meriden, Conn.* 33 Wall st.
St. Lawrence University 1898, Classics
M.A. Yale University 1902
- Jiroku Kawabe *Kyoto, Japan* 363 Crown st.
Doshisha College 1893, Philosophy
M.A. Yale University 1900
- Robert Henry Keener, B.A. *St. Joseph, Mo.* 148 Norton st.
Yale University 1899, M.A. 1901 Classics
- Paul Delmar Kelleter, B.A. *St. Louis, Mo.* 30 Tilton st.
Washington University 1902 Botany and Mineralogy
- Andrew Keogh *New Haven, Conn.* 751 George st.
Modern Languages
- Edwin Burruss King, B.A. *Southboro, Mass.* A.
Yale University 1898 English
- Linus Warner Kling, B.A. *Rock Island, Ill.* 105 Park st.
Augustana College 1892, Latin
M.A. University of Nebraska 1899
- Lolo Margaret Knepper, B.A. *Lewiston, Idaho* 366 Whalley av.
University of Idaho 1898, English
M.A. University of California 1900
- Arthur Potter Knight, PH.B. *Rome, N. Y.* 132 Wall st.
Yale University 1901 Civil Engineering
- Joseph Lehn Kreider, B.S. *Annvile, Pa.* 281 Crown st.
Lebanon Valley College Chemistry

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|--|-------------------------------|--|
| Tozaburo Kudo, M.A.
DePauw University 1897,
M.A. Yale University 1901 | <i>Tokio, Japan</i> | 722 W. D.
Philosophy |
| Beverly Waugh Kunkel, PH.B.
Yale University 1901 | <i>Harrisburg, Pa.</i> | 2 Hillhouse av.
Biology |
| Yoshihiko Kurata
Keiogijiku College 1897 | <i>Nagato, Hagi, Japan</i> | 6 Trumbull st.
Economics |
| Ralph Walker Langley, PH.B.
Yale University 1902 | <i>New Haven, Conn.</i> | 229 Blatchley av.
Physiology and Physical Chemistry |
| William Gilbert Lathrop, B.A.
Brown University 1889,
B.D. Yale University 1892 | <i>Shelton, Conn.</i> | Shelton
Social Science |
| Anna Cornelia Latimer, B.A.
Mt. Holyoke College 1898 | <i>Newington Junc., Conn.</i> | 1179 Chapel st.
English |
| Charles Stanley Leavenworth, PH.B.
Yale University 1902 | <i>Hamden, Conn.</i> | Whitneyville
Chemistry |
| Frederick Lent, B.A.
Brown University 1900, M.A. 1901,
B.D. Newton Theol. Institute 1900 | <i>New Bedford, Mass.</i> | 129 Dwight st.
Biblical Literature |
| Oliver Clarence Lester, B.A.
Central College 1897, M.A. 1898,
M.A. Yale University 1902 | <i>Fayette, Mo.</i> | 497 Elm st.
Mathematics and Physics |
| Edwin Colby Lewis, B.A.
Yale University 1901 | <i>St. Johnsbury, Vt.</i> | A.
Economics |
| Frederick Nye Lindsay, B.A.
Yale University 1889, B.D. 1894 | <i>Charlotte, N. Y.</i> | A.
Philosophy |
| Herbert Norton Loomis, B.S.
Harvard University 1901 | <i>New Haven, Conn.</i> | 18 Ward st.
Philosophy |
| George Blakeman Lovell, B.A.
Yale University 1901 | <i>Guilford, Conn.</i> | Guilford
Psychology |
| Gilbert Lovell, B.A.
Yale University 1900 | <i>Plainfield, N. J.</i> | A.
Biblical Literature |
| Frederick Bliss Luquiens, B.A.
Yale University 1897 | <i>New Haven, Conn.</i> | 201 Bishop st.
Romance Languages |
| Huc Mazelit Luquiens, B.A.
Yale University 1902 | <i>New Haven, Conn.</i> | 201 Bishop st.
Fine Arts |
| Adam Ruth Lutz, B.A.
Franklin and Marshall College 1896 | <i>Strasburg, Pa.</i> | Bethlehem
Biblical Literature |
| Oliver Perry McAuley, B.A.
Valparaiso College 1887, M.A. 1894 | <i>Valparaiso, Ind.</i> | 361 Orange st.
History |

- Frank Mitchell McClenahan, B.A. *Allegheny City, Pa.* 131 Dwight st.
Tarkio College 1896, Chemistry
B.A. Yale University 1900, M.A. 1901
- Raymond Benedict McClenon, B.A. *Huron, S. D.* 366 Whalley av.
Yankton College 1902 Philosophy and Mathematics
- David Ford McFarland, B.A. *Lawrence, Kans.* 22 Whalley av.
University of Kansas 1900, M.A. 1901 Organic Chemistry
- Margaret McLaughlin, B.A. *Smithland, Tenn.* 486 Elm st.
National Normal University 1890 English and History
- Herbert Samuel Mallory, PH.B. *Akron, O.* 87 Dwight st.
Western Reserve Univ. 1899, M.A. 1900 English
- Milton Mozart Marble, B.A. *New Haven, Conn.* 1589 Chapel st.
Harvard University 1889 Mineralogy
- Herbert Martin, B.A. *Lexington, Ky.* 723 Elm st.
Kentucky University 1899, M.A. 1900 Philosophy
- Roy Murdoch Mason, B.A. *New York City* A.
Yale University 1902 English
- Otojiro Matsuo *Tokyo, Japan* 6 Trumbull st.
Doshisha College 1889 Economics
- Ralph Nelson Maxson, B.S. *Westerly, R. I.* 87 Dwight st.
Rhode Island State College 1902 Chemistry
- Colton Maynard, B.A. *Baltimore, Md.* A.
Yale University 1901 History and English
- Herbert Edwin Medway, B.A. *Daleville, Pa.* 64 Lake pl.
Yale University 1900 Chemistry
- Henry Franklin Merriam, PH.B. *Summit, N. J.* 162 S. L.
Yale University 1900 Organic Chemistry
- Hamilton Griswold Merrill, B.A. *Andover, Mass.* 104 Prospect st.
Amherst College 1900 Mineralogy and Botany
- Helen Abbott Merrill, B.A. *Brentwood, N. Y.* 37 Howe st.
Wellesley College 1886 Mathematics
- Ernest Loren Merritt, B.A. *West Eaton, N. Y.* 49 Carmel st.
Wesleyan University 1891 Latin
- Walter Eugene Meyer, B.A. *New York City* A.
Yale University 1901 English
- Kumazo Mikami, B.D. *Tokyo, Japan* 6 Trumbull st.
Trinity College, Japan, 1890 Economics
- Frank S. Miller, PH.B. *Red Oak, Iowa* 74 Lake pl.
State University of Iowa 1900 Mineralogy

Louis Christian Miller, B.S. Oklahoma Agr. and Mech. College 1900	Stillwater, Okla. Botany	94 Division st.
Annie Sybil Montague, B.A. Wellesley College 1879, M.A. 1882	Cambridge, Mass. Greek	37 Howe st.
Jitaro Mori Doshisha College 1894	Iyo, Japan Political and Social Science	263 Crown st.
Sidney Byron Morton, B.A. Yale University 1900	Chicago, Ill. Latin and Greek	1157 Chapel st.
Russell Mott, B.A. Yale University 1901	Michigan City, Ind. English	A.
Daniel Leeper Munipower, B.A. Central College 1902	Fayette, Mo. Economics and History	47 Lake pl.
Tsutomu Murata Doshisha College 1887	Kyoto, Japan Biblical Literature	708 W. D.
Herbert Spencer Murch, B.A. University of Oregon 1898	Coburg, Oregon English	373 Crown st.
Watson Nicholson, B.A. Leland Stanford Jr. Univ. 1892, M.A. Harvard Univ. 1895	Redlands, Cal. English	514 George st.
Nariyoshi Nishiike Doshisha College 1893	Kyoto, Japan Economics	373 Crown st.
Wallace Notestein, B.A. University of Wooster 1900	Wooster, O. English	1157 Chapel st.
Shigekichi Omura, B.A. Denver University 1900	Fukuoka Ken, Japan Philosophy	32 Grove st.
Herman Max Opitz, B.A. Yale University 1900	Norwich, Conn. German	120 York st.
Rufus Melvin Overlander, LL.B. Yale University 1897, B.A. 1898	New Haven, Conn. Economics	373 Crown st.
Andrew Dickson Packer, B.A. Yale University 1902	Brooklyn, N. Y. English	A.
Jennie Alice Park, B.S. Mt. Holyoke College 1896	Exeter, Conn. Mathematics	230 Oak pl.
Mary Isabel Park, B.A. Mt. Holyoke College 1893	Exeter, Conn. Philosophy	230 Oak pl.
William White Wilson Parker, B.A. Yale University 1893	Washington, D. C. History	A.
Allan Bouton Patterson, B.S. Dartmouth College 1898	Concord, N. H. Mineralogy and Botany	8 Prospect pl.

Aaron Perry, B.A. Acadia University 1901, M.A. 1902	<i>St. John, N. B.</i> 68 Whalley av. English
Conrad Peterson, B.A. Augustana College 1901	<i>Arlington, N. Y.</i> 124½ Park st. Philosophy and History
Lemuel Gardner Pettee, B.A. Yale University 1898	<i>Simsbury, Conn.</i> A. Economics
Edgar Heaton Price, B.A. Drury College 1895, B.D. Yale University 1898	<i>Carthage, Mo.</i> 680 W. D. Sociology
Oscar Stoddard Pulman, Jr., B.A. Yale University 1900	<i>Albany, N. Y.</i> Kent Lab'y Chemistry
Albert Hutchinson Putney, B.A. Yale University 1893, LL.B. Boston University 1895	<i>Chicago, Ill.</i> A. History
Ernest Martin Quittmeyer, B.A. Wesleyan University 1899, M.A. Yale University 1901	<i>Bridgeport, Conn.</i> Bridgeport Philosophy
Edward Everett Rall, B.A. University of Iowa 1900	<i>Cedar Falls, Iowa</i> 224 Oak pl. Philosophy
John Arthur Ray, B.A. Baylor University 1898, B.A. Yale University 1899	<i>Waco, Tex.</i> A. German
Percy Edward Raymond, B.A. Cornell University 1902	<i>New Canaan, Conn.</i> 73 Lake pl. Paleontology
Jeremiah Rebmann, B.S. University of Nebraska 1898	<i>Lincoln, Nebr.</i> 313 Winchester av Mineralogy
Paul Goodwin Redington, B.A. Dartmouth College 1900	<i>Evanston, Ill.</i> 8 Prospect pl. Mineralogy and Botany
John Pierrepont Rice, B.A. Yale University 1900, M.A. 1901	<i>Santa Barbara, Cal.</i> 707 W. D. Romance Languages
Allan Douglas Risteen, B.S. Worcester Polytechnic Institute 1885	<i>Hartford, Conn.</i> Hartford Mathematical Physics
Frederick Oscar Robbins, B.A. Yale University 1896	<i>New Haven, Conn.</i> 341 Winthrop av. Romance Languages
John Nelson Robertson, B.A. Toronto University 1897	<i>Toronto, Can.</i> 124½ Park st. Latin
William Spence Robertson, B.L. University of Wisconsin 1899	<i>Oxford, Wisc.</i> 23 Lynwood pl. History
Chalfant Robinson, B.L. University of Cincinnati 1893, Ph.D. Yale University 1902	<i>New Haven, Conn.</i> 68 Trumbull st. History

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|---|---|
| Henry Hollister Robinson, PH.B.
Yale University 1895, C.E. 1897 | Hartford, Conn. 333 York st
Natural Science |
| Robert Kilburn Root, B.A.
Yale University 1898, PH.D. 1902. | New Haven, Conn. 26 Edgewood av.
English |
| Henry Nichols Sanborn, B.A.
Dartmouth College 1902 | Boston, Mass. 217 York st.
English |
| Charles Edward Sargent, M.A.
Bates College 1883 | New Haven, Conn. 20 Eld st.
Political and Social Science |
| Clifton James Sarle, B.S.
University of Rochester 1902 | Rochester, N. Y. 545 Howard av.
Paleontology |
| Carl Frederick Schulz, B.A.
Yale University 1901 | Corona, L. I. 129 Howe st.
History |
| Samuel Scoville, B.A.
Yale University 1893 | Philadelphia, Pa. A.
Scandinavian Languages |
| Avery Turner Searle, B.A.
Pomona College 1896 | Claremont, Cal. 159 Blake st.
Mineralogy and Botany |
| Kazutomo Seki
Tokyo Semmon-Gakco 1894 | Japan 6 Trumbull st.
Political Economy |
| Elias Howard Sellards, B.A.
Univ. of Kansas 1899, M.A. 1900 | Lawrence, Kans. 22 Whalley av.
Paleobotany |
| Genzaburo Seshimo
Waseda University 1902 | Gunmaken, Japan 6 Trumbull st.
Political Economy |
| Ichino Shibata, B.A.
Keiogijiku University 1901,
M.A. Yale University 1902 | Tokyo, Japan 44 High st.
Philosophy of Religion |
| Franklin Victory Sikes, B.A.
Yale University 1900 | Suffield, Conn. 265 L.
Fine Arts |
| William Ernest Andrew Slaght, B.A.
Toronto University 1898,
B.D. Yale University 1902 | Westbrook, Conn. Westbrook
Biblical Literature |
| Andrew Sledd, M.A.
Randolph-Macon College 1894,
M.A. Harvard University 1896 | Norfolk, Va. 78 Lake pl.
Latin |
| Burke Smith, B.S.
University of Washington 1899 | Auburn, Wash. 1136 Chapel st.
Mathematics |
| Clara Eliza Smith, B.A.
Mt. Holyoke College 1902 | Northford, Conn. 42 Park st.
Mathematics |
| Clinton Gold Smith, B.AGR.
Conn. Agricultural College 1898 | Atlanta, Ga. 182 Mansfield st.
Mineralogy and Botany |

Ernest Walker Smith, B.A. Yale University 1901	<i>Farmington, Conn.</i> English	A.
Keith Smith, B.A. Yale University 1902	<i>Manila, Utah</i> Economics	A.
Rest Fenner Smith, Jr., B.A. Yale University 1894	<i>New York City</i> History	47 Lake pl.
Robert John Smith, B.A. Drake University 1896, M.A. 1898, B.D. Yale University 1902	<i>Des Moines, Iowa</i> Sociology, Economics	122 Derby av.
Sarah Elizabeth Marquand Smoot, B.A. University of California 1899	<i>New Bedford, Mass.</i> English	1233 Chapel st.
John Lewis Sparklin, B.A. Wesleyan University 1897	<i>Stepney Depot, Conn.</i> Pedagogy	Stepney Depot
Oscar Emil Staaf, B.A. Bethany College 1900, M.A. Yale University 1902	<i>Lindsborg, Kans.</i> Latin	88 Prospect st.
Frederick Clark Stanley, B.A. Williams College 1893	<i>Bridgeport, Conn.</i> Mineralogy	Bridgeport
Joannes Gabriel Statiropoulos, B.A. Anatolia College 1899	<i>Talao Caesaria, Asia Minor</i> Chemistry	153 Franklin st.
Harry Merriman Steele, PH.B. Yale University 1894, M.D. Johns Hopkins University 1902	<i>New Haven, Conn.</i> Physiology and Physiol. Chemistry	226 Church st.
Douglas Bovard Sterrett, B.S. Columbian University 1902	<i>Washington, D. C.</i> Geology, Mineralogy	39 Lynwood pl.
William Oliver Stevens, B.A. Colby College 1899	<i>Moulmein, Burma</i> English	139 Dwight st.
Jay Thomas Stocking, B.A. Amherst College 1895, B.D. Yale University 1901	<i>Canton, N. Y.</i> Biblical Literature	Berlin, Germany
Paul Moore Strayer Baltimore City College 1892	<i>S. Norwalk, Conn.</i> Biblical Literature and Semitic Languages	S. Norwalk
Carl Eben Stromquist, B.S. Bethany College 1899	<i>McPherson, Kans.</i> Mathematics	59 Prospect st.
George Sverdrup, B.A. Augsburg Seminary 1898, M.A. Yale University 1902	<i>Minneapolis, Minn.</i> Semitic Languages	222 Crown st.
Robert Eccles Swain, B.A. Leland Stanford Jr. University 1899, M.S. Yale University 1901	<i>Palo Alto, Cal.</i> Physiology and Physiol. Chemistry	A.

Charles Rufus Swift, Jr., B.A. Yale University 1899	West Hartford, Conn. Latin	717 W. D.
Yoshio Takarayama Imperial University of Japan 1896	Kyoto, Japan Philosophy	103 Park st.
Mignon Talbot, B.A. Ohio State University 1892	Columbus, O. Paleontology	134 Howe st.
Morris Gardner Talcott, B.A. Yale University 1902	Talcottville, Conn. Mineralogy	264 L.
Leonard Merrill Tarr, B.A. Bates College 1882, M.A. Yale University 1901	New Haven, Conn. Physics	156 Whalley av.
Edwy Lycurgus Taylor, Jr., PH.B. Yale University 1901	Albany, N. Y. Civil Engineering	264 L.
Wyatt Warner Taylor, PH.B. Yale University 1900	Stamford, Conn. Mechanical Engineering	A.
John Martin Telleen, B.A. Augustana College 1898, M.A. Yale University 1902	Rock Island, Ill. English	254 Crown st.
George Bremner Tennant, B.A. Yale University 1900	Waterbury, Conn. English	A.
Ada Thurman Terrill, B.A. North Texas Normal College 1901	Decherd, Tenn. Chemistry	70 Howe st.
Lucy Elizabeth Textor, PH.B. University of Michigan 1894, M.A. Leland Stanford Jr. Univ. 1895	Chicago, Ill. History	144 Greene st.
Henry Clarke Thacher, B.A. Yale University 1902	Baltimore, Md. Physiology and Physiological Chemistry	652 E. D.
Charles Seymour Thompson, B.A. Yale University 1902	New Haven, Conn. History	89 S. M.
Elbert Nevius Sèbring Thompson, B.A. Yale University 1900	New Haven, Conn. English	95 Whalley av.
Norman Campbell Thorne, B.A. Yale University 1902	Central Valley, N. Y. Chemistry	131 Dwight st.
Edward Thorstenberg, B.A. Bethany College 1899, M.A. Yale University 1902	Assaria, Kans. German	47 N. S. H.
John Quillin Tilson, B.A. Yale University 1891, LL.B. 1893, M.L. 1894	Clear Branch, Tenn. Economics	463 FW.

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|---|---|
| John Arend Timm, B.D.
Yale University 1902 | <i>New Haven, Conn.</i> 106 York sq.
Biblical Literature and Semitic Languages |
| George Tolover Tolson, B.A.
Pacific College 1899,
B.D. Pacific Theol. Sem. 1902 | <i>Berkeley, Cal.</i> 632 E. D.
Biblical Literature |
| Thomas Cann Quincy Trash, B.A.
Yale University 1893 | <i>New York City</i> A.
History |
| Edson Newton Tuckey, B.A.
Hamlin College 1893 | <i>St. Paul, Minn.</i> 23 Lynwood pl.
Economics |
| Edgar Collins Tullar, B.A.
Albion College 1897 | <i>Seymour, Conn.</i> Seymour
Biblical Literature |
| Edwin Hotchkiss Tuttle, B.A.
Yale University 1901 | <i>New Haven, Conn.</i> 217 Mansfield st.
Romance Languages |
| Frank Pell Underhill, PH.B.
Yale University 1900 | <i>Norwalk, Conn.</i> 2 Hillhouse av.
Physiology and Physiol. Chemistry |
| Albert William VanBuren, B.A.
Yale University 1900 | <i>New Haven, Conn.</i> Rome, Italy
Classics |
| John Abert VanGroos, B.S.
Oregon Agricultural College 1899 | <i>Cornwallis, Oregon</i> 133 Main st.
Mathematics |
| John Armstrong Wade, B.A.
Yale University 1899, B.D. 1901 | <i>Brooklyn, N. Y.</i> 687 W. D.
Biblical Literature |
| Charles Philip Wagner, B.A.
Yale University 1899, PH.D. 1902 | <i>Putnam, Conn.</i> 201 Bishop st.
Romance Languages |
| Harrison Grow Wagner, PH.B.
Yale University 1895, LL.B. 1898 | <i>New Haven, Conn.</i> 40 Pearl st.
Mineralogy |
| Curtis Howe Walker, B.A.
Yale University 1899 | <i>New Haven, Conn.</i> 562 P.
History |
| Minot Lester Wallace, B.A.
Yale University 1897 | <i>Englewood, N. J.</i> A.
History, Latin |
| William Knickerbocker Wallbridge, PH.B.
Yale University 1902 | <i>Litchfield, Conn.</i> 137 College st.
Chemistry |
| Arthur Gustavus Ward, B.A.
Yale University 1900 | <i>Evans Mills, N. Y.</i> 571 P.
German |
| Brownlee Robertson Ward, B.A.
Yale University 1888, PH.B. 1889,
M.S. Columbia University 1892 | <i>New Haven, Conn.</i> 231 York st.
French History |
| Charles McLean Warren, B.A.
Yale University 1898 | <i>Collinsville, Conn.</i> 639 E. D.
Biblical Literature |

Albert Micajah Webb, B.A. Yale University 1901	<i>Bell Buckle, Tenn.</i> 122 Howe st. Romance Languages
Richard Webb, B.A. Trinity College (N. C.) 1900	<i>Durham, N. C.</i> 1157 Chapel st. English
Luther Allen Weigle, B.A. Pennsylvania College 1900	<i>Mechanicsburg, Pa.</i> 62 Lake pl. Philosophy
George Arnold Welch, B.A. Yale University 1901	<i>Cleveland, O.</i> A. English
Charles Heald Weller, B.A. Yale University 1895	<i>New Haven, Conn.</i> 382 Crown st. Greek
Wilhelmus David Allen Westfall, B.A. Yale University 1901	<i>Montague, N. J.</i> 43 Hotchkiss st. Mathematics
Sidney Adams Weston, B.A. Yale University 1900, M.A. 1901	<i>Sharon, Mass.</i> 690 W. D. Biblical Literature and Semitic Languages
Monroe Nichols Wetmore, B.A. Yale University 1888, M.A. 1900	<i>Lebanon, Conn.</i> 361 Elm st. Latin
Charles Augustus Wheeler, B.A. Yale University 1895	<i>Spring Hill, Conn.</i> 345 Winthrop av. Mathematics
George Benjamin White, PH.B. Yale University 1900	<i>Cooperstown, N. Y.</i> 721 W. D. Physiology and Physiol. Chemistry
Ogden Watson White, B.A. Yale University 1901	<i>Waterbury, Conn.</i> A. English
Paul Whitin, B.A. Yale University 1898	<i>Northbridge, Mass.</i> A. English
George Reber Wieland, B.S. Pennsylvania State College 1893. PH.D. Yale University 1900	<i>Chester, Pa.</i> Museum Natural Science
Arthur Baldwin Williams, Jr., B.A. Yale University 1898	<i>New York City</i> A. Philosophy
Arthur Collins Williams, B.A. Yale University 1898	<i>Hartford, Conn.</i> A. Biblical Literature
Richard Solomon Williams, B.S. Amherst College 1902	<i>Glastonbury, Conn.</i> 646 E. D. Chemistry
Robert Bruce Wilson, B.A. Yale University 1901	<i>Portland, Oregon</i> 182 Mansfield st. Mineralogy and Botany
Andrew Lincoln Winton, PH.B. Yale University 1884	<i>New Haven, Conn.</i> 136 Canner st. Botany and Chemistry
De Winter, B.L. University of California 1892, M.A. Harvard University 1894	<i>Berkeley, Cal.</i> 59 Wall st. English

John William Withers, B.A. National Normal University 1891, PED.D. 1897, M.A. Yale University 1902	<i>Lebanon, O.</i> Philosophy	486 Elm st.
Benjamin Mead Wright, B.D. Yale University 1897	<i>Orange, Conn.</i> English	Orange
Henry Burt Wright, B.A. Yale University 1898	<i>New Haven, Conn.</i> Classics	128 York st.
Arthur Frederic Yaggy, B.A. Yale University 1901	<i>Hutchinson, Kans.</i> English	A.
Kaiei Yamasaki Keioijiku University 1901, M.A. Yale University 1902	<i>Tokyo, Japan</i> Philosophy	103 Park st.
Masajiro Yokoyama, M.A. Yale University 1901	<i>Okayama, Japan</i> Economics, Finance	347 Crown st.
Tokumatsu Yonemura Kumamoto College 1896	<i>Kumamoto, Japan</i> Economics	6 Trumbull st.
George Albert Young, B.S. McGill University 1898, M.S. 1901	<i>Kingston, Ont.</i> Geology	Kent Hall

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CLASSICAL AND INDO-IRANIAN PHILOLOGY AND ARCHAEOLOGY

The courses given in this department are designed to meet the needs of two classes of students, those who intend to become candidates for the degree of Ph.D. and those who are able to take only a shorter period, one or two years, for graduate study, either with or without reference to the M.A. degree.

For students who expect to apply for the degree of Ph.D. a graded series of courses is offered, covering with some completeness the field of classical philology. These are arranged in three groups, courses in literature, courses in language, and courses in the contributory sciences. No one of these groups may wisely be neglected, nor is a candidate for the degree allowed to give either to Greek or to Latin alone more than three-fourths of his time.

The courses in literature are the foundation of all other work, and are most directly valuable for teaching. They are of two kinds : in the more thorough courses the student learns the methods of interpretation and gets an intimate knowledge of a small portion of an author ; the courses which cover a wider field give a general view, bring out the larger features of an author or a period, and suggest a pattern for private reading.

Most of the courses on language bear less directly upon elementary teaching, but they are useful even there, and are indispensable as a preparation for later productive work. Courses in the general principles of linguistics should be taken first, then work in comparative philology, and finally linguistic work in Greek or Latin. Sanskrit,

a knowledge of which is desirable even for students who do not intend to teach it, may profitably be taken early, in order that it may be used in other courses in this group.

The courses in special subjects are partly for method (text-criticism, source-criticism), partly for information (archaeology, metric, palaeography, history of philology). These subjects are for the most part of such a character that they cannot be studied to advantage without an instructor and a large library.

All candidates for the degree are expected to take for at least one year the work of the Seminary, both in Greek and in Latin, and in preparation for this to take some course (*e. g.*, course 46) in which text-criticism is made prominent. As the instructor and the subject and method of the Seminary change from year to year, students should attend the sessions as listeners as regularly as possible, even when they are not members of the Seminary.

In selecting from the courses here offered, a candidate for the degree should be governed by these considerations:—

(a) Some of the courses require a large amount of preparation, while others require little. A combination of lighter and heavier courses should be made and for this purpose the student may, at the beginning of the year, visit a large number of courses and postpone his formal registration for two or three weeks. In ordinary cases as many as twelve hours should be taken in the first year and as many as eight in the second year; the third year will be largely occupied with work upon the thesis.

(b) Of the courses here offered many are given only every second or every third year. So far as it is possible to do so, the omitted courses which will be given in the following years are included in the prospectus, and the student should in general plan his course of work in advance.

(c) The courses which are of such a character as to require a large library and the help of an instructor should receive special attention.

(d) The whole time of the student should not be given to work in courses. The habit of extensive private reading and of following current thought in philological journals should be formed early and maintained persistently. Advice and assistance in this direction will gladly be given by any instructor. A course of lectures on the use of the Library is given each year by a member of the staff of the University Library.

The degree of Ph.D. is given under the general regulations of the Graduate School (see pamphlet, p. 11). The special requirements of the classical department permit and even encourage a considerable freedom of choice and cannot therefore be defined precisely. In general, it must be understood that the degree is not granted as a certificate of residence and work, however faithful, but as an indication that the student who receives it has attained a considerable proficiency in classical philology. The evidence of such attainment is to be given in three ways :—

(a) By a thesis, which shows that the writer is capable of doing independent scientific work. The subject of the thesis should be a definite problem, of a scientific character and of somewhat limited range. It is best to postpone the selection of a subject until the latter part of the second year of graduate study, in order that the student may first come into contact with various sides of philological work. The officers of the department will be ready to advise in regard to the choice of a subject and, so far as it may properly be done, in regard to the best method of handling the material.

(b) By a list of the candidate's reading in Greek, Latin, or Sanskrit. Upon this list or any part of it and upon the ability to read Greek and Latin freely, an examination may be set at the option of the department.

(c) By an oral examination, in two parts ; first, a detailed and rigid examination upon a single author, selected by the candidate and approved by the department ; and, second, an examination upon the whole field of classical

philology. The first part of the examination tests the thoroughness of the candidate's knowledge, the second part tests its breadth and extent.

Students who can give but one year to graduate study and especially those who have been engaged in teaching are advised to devote their time mainly to learning methods of work. For this purpose one or more of the thorough courses in authors should be taken; these teach the methods of criticism and interpretation and give a practical acquaintance with the philological literature bearing upon an author. Next in importance is the selection of subject-courses, in archaeology, palaeography, linguistics, metric, grammar or syntax, one of which may become the foundation of later private study and production. Students whose time is limited are especially advised to learn to use the editions and books of reference in the library of the Classical Club and to make lists for guidance in the future purchase of books.

For the purpose of training in the methods of teaching, informal conferences are held by some of the instructors. See also courses 31-36, pp. 29, 30, 31. The undergraduate classes may also be visited in order to study the methods of instruction employed in Yale College.

PEABODY MUSEUM OF NATURAL HISTORY

CURATORS

CHARLES E. BEECHER, Ph.D., *Curator of the Geological Collection*
ADDISON E. VERRILL, M.A., *Curator of the Zoological Collection*
EDWARD S. DANA, Ph.D., *Curator of the Mineralogical Collection*
GEORGE F. EATON, Ph.D., *Curator of the Osteological Collection*
GEORGE G. MACCURDY, M.A., *Curator of the Anthropological Collection*

The first floor of the Museum building is devoted to the department of Mineralogy and to the purposes of a large lecture-room. The minerals occupy cases in the west room, the door of which fronts the entrance to the Museum. The minerals of the Gibbs collection, purchased in 1825, and the extensive accumulations since made, are here preserved and for the most part on exhibition, making it one of the largest public collections in the country. Besides minerals, the exhibition-room contains one of the most extensive collections of meteorites in the country. A large room on the same story is arranged for mineralogical and blowpipe instruction, with desks and a students' cabinet of minerals, under the charge of Professor Penfield. An adjoining room contains the laboratory of physical mineralogy; also the library and cabinet of Professor Brush, which add greatly to the means of study and investigation in Mineralogy.

The second floor is given up to Geology and Paleontology. The southern room contains the exhibition of vertebrate fossils, among which may be mentioned the skeleton of a large Dinosaur (*Claosaurus*), specimens of toothed birds, Mastodon, remains of Miocene *Brontotheridae*, Eocene *Dinocerata*, skeletons of Moas from New Zealand, and the skull of *Triceratops*, a gigantic Dinosaur from Wyoming.

The western exhibition-room is occupied mainly by a collection of invertebrate fossils, arranged zoologically.

Some of the more important exhibits are: type specimens illustrating the structure, development, and classification of Trilobites, large slabs of Crinoids from Indiana and Kansas, and many series showing the stages of growth in the Brachiopods and Corals.

Of the collection of foot-prints belonging to the University, only a few fine slabs are shown in the invertebrate exhibition-room.

The third story is occupied with the recent zoological collections, so far as there is room for their exhibition. The general invertebrate collection occupies the western room, and is noteworthy for the extensive series of sponges, corals, echinoderms, model of a large Octopus and Squid, and for special collections from New England, the Pacific Coast of America, Bermuda, Florida, etc.

The southern exhibition-room of the zoological story contains a collection of skeletons, as well as mounted and alcoholic specimens, including a nearly complete series of the vertebrate species inhabiting New England.

The second and third stories have also laboratories and work-rooms, devoted mainly to the department represented in the exhibition-rooms on the same floor. The Petrographical laboratory is likewise in the second story. The rooms contain also large collections of specimens, arranged in drawers and trays, which are open to special students in the department. Each department of the Museum has its own special library.

In the fourth story are a number of store-rooms and an Anthropological collection.

The basement is used for work-rooms and store-rooms, and contains a vast amount of specimens, especially in the department of Paleontology and Zoology.

MINERALOGY

The department of Mineralogy occupies the first floor of the Peabody Museum. In one of the large rooms the Yale

College Collection, of which Professor Dana is curator, is placed on exhibition and is accessible at all times to the public, except on holidays and during the month of August. The collection is a very complete and valuable one, the nucleus of which is the famous Gibbs Collection, purchased by the college in 1825 from Colonel George Gibbs of Rhode Island for \$20,000. There are also on public exhibition in the cabinet-room the Yale College Collection of Meteorites and a portion of the Blum Collection of Pseudomorphs. The last-named collection is that of the late Professor J. Reinhard Blum of the University of Heidelberg, purchased by the college about thirty years ago. This collection of pseudomorphs is especially valuable, as it contains the type specimens described by Professor Blum in his book "*Die Pseudomorphosen des Mineralreichs, 1843-1879.*"

The department of Mineralogy in the Sheffield Scientific School occupies two adjoining rooms in the Museum. In one of these there are contained the private collection and library of Professor George J. Brush. Professor Brush started his mineral collection about fifty years ago, with the idea of bringing together specimens for the purpose of study and investigation, and the collection has grown to be a very extensive and valuable one. It is especially important, as it contains the type specimens of the large number of minerals which have been investigated in the chemical and mineralogical laboratories of the Sheffield Scientific School. The collection is used for the purposes of instruction in mineralogy and crystallography, and it contains much material for chemical and crystallographic investigation. In addition to the Brush collection there are collections of labeled and unlabeled specimens which are at all times accessible to students and have been selected especially for purposes of instruction in determinative and descriptive mineralogy; also collections of crystals, and of wooden and glass models for illustrating the science of crystallography. The depart-

ment is well equipped with goniometers, microscopes, polariscopes, and apparatus necessary for the physical and optical examination of crystals.

One room is fitted up as a laboratory for determinative mineralogy and as an analytical laboratory for the complete chemical investigation of mineral substances. The importance of careful chemical work in connection with the investigation of mineral substances cannot be overestimated, and analytical chemistry has always been insisted upon as a foundation for mineralogical work at Yale.

Very complete series of journals and works pertaining to mineralogy and crystallography are contained in the libraries of Professors Brush and Dana, and in the Yale University Library.

PETROLOGY

The work in this branch of Geology is carried on in a large well-lighted laboratory in Peabody Museum especially devoted to this purpose. In addition to the general exhibition collections, libraries, etc. of the museum which are accessible to students in this department, it contains the following material for purposes of instruction.

a. A study collection consisting of 1,500 specially selected specimens, largely from type localities.

b. The Educational Series prepared by the U. S. Geological Survey.

c. A large number of local collections illustrating the petrology of various regions, both in this country and abroad, which have been studied and described.

d. A number of local collections and material not yet studied and available for investigation and description.

These specimens, numbering many thousands, are arranged in cases in drawers which make them readily accessible for study and reference, and thin sections have been prepared from nearly all of them.

For microscopical and optical work the laboratory is well supplied with collections of prepared sections and microscopes, the latter being of the latest patterns by Fuess of Berlin.

The laboratory also contains a special library consisting of several thousand catalogued books and pamphlets affording practically the complete literature of the subject.

For chemical and special mineralogical work in connection with rocks, the apparatus and laboratories of the mineralogical department are available. For the preparation of thin sections a room with suitable apparatus of the latest patterns is provided in the basement.

PALEONTOLOGY

The Paleontological Section of the Peabody Museum contains collections representing the departments of fossil vertebrates, invertebrates, and plants. The exhibition series of fossil vertebrates occupies one of the large halls in the Museum building. Some of the remarkable types described by the late Professor O. C. Marsh are here displayed. The bulk of the vertebrate collections, however, are stored in rooms not open to the general public, but are accessible to special students.

The invertebrate exhibition hall contains collections representing the different orders of invertebrate animals, and is especially rich in series showing the stages of development and structural details. In the storage rooms are collections from many parts of the world. These may be used by students in Paleontology in investigating special problems and for general work.

In paleobotany, the museum possesses extensive collections of fossil Cycads and Carboniferous plants.

A department library devoted to Geology and Paleontology occupies a separate room, and contains most of the important works as well as the periodical literature relating to these sciences.

ZOOLOGY

The Zoological Department includes several distinct collections, besides the general systematic collection. In the latter, all departments of the animal kingdom are well represented, although only a part can be put on exhibition, for lack of room.

The principal special collections are as follows :

1. A very extensive and complete collection of the deep-sea fauna of the Atlantic ocean, mostly obtained by the deep-sea explorations made by the United States Fish Commission, from 1880 to 1887, while Professor Verrill had charge of those investigations. This includes a large number of types of new genera and species.

2. A remarkably complete series of the marine fauna of the New England coast and adjacent waters, including large numbers of described types of genera and species. This was also mostly collected by Professor Verrill, from 1864 to 1865, partly in connection with the work of the U. S. Fish Commission, and partly by independent explorations, with parties of his students.

3. A nearly complete collection of the Mammals, Birds, Reptiles and Fishes of New England, with a good series of the eggs and nests of the birds. In this collection is included the series of New England birds obtained and mounted by the late Professor W. D. Whitney.

4. A nearly exhaustive collection of the marine and terrestrial animals of the Bermudas, mostly collected by Professor Verrill and parties of his students in 1898 and 1901. This collection contains large numbers of types of new species recently described and figured by Professor Verrill and others. The collection of corals is particularly large and complete, and many of them have been figured in the Transactions of the Connecticut Academy, Vol. XI.

5. A very extensive collection of the marine fauna of Panama and the Gulf of California. This includes nearly all the types of the corals and echinoderms, etc., described from that coast by Professor Verrill many years ago.

6. A very valuable collection of corals from the East Indies, Pacific Ocean, and Brazil, including large numbers of the original types of corals described and figured in the great work of Professor J. D. Dana, on the Zoöphytes of the U. S. Exploring Expedition under Wilkes, and also numerous types of corals since described and figured by Professor Verrill, from the same regions.

7. A very valuable series of the more brilliant and rarer birds of New Guinea and Australia, presented by the late Mr. D. A. Heald, as a memorial of his son, Mr. C. A. Heald, who died while a student in the University.

OSTEOLOGY

The collection of recent Osteology in the Peabody Museum is in many respects the most complete collection in this country for purposes of study. Efforts have been made to secure the skeletons of rare existing vertebrates from every part of the world, particularly of Mammals, Birds, and Reptiles. The mammalian series is large and is especially valuable for the number and variety of the skeletons of Primates which it contains.

A part of the collection, consisting mainly of mounted skeletons, is placed on exhibition in one of the large rooms on the third floor; but the greater number of specimens, including the unmounted skeletons, are contained in the store-rooms and laboratories, where they are accessible for study and investigation.

ANTHROPOLOGY

On the fourth floor is the large Anthropological collection much of which was presented to the University by Professor Marsh and which has been increasing rapidly since his death. The exhibits already installed comprise: a Paleolithic series from France and England; Antiquities from Scandinavia and the Swiss Lake Dwellings, belonging chiefly to the Neolithic period; an Ethnological

collection from Alaska; the Benjamin Hoppin Eskimo collection; Egyptian Antiquities from the Egypt Exploration Fund and the Barringer collection; and the Mr. and Mrs. William H. Moseley collection of Indian Basketry; besides miscellaneous objects. These form but a small part of the entire collection, the remainder of which is kept in storage, and at present accessible only for purposes of special study.

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GRADUATE SCHOOL

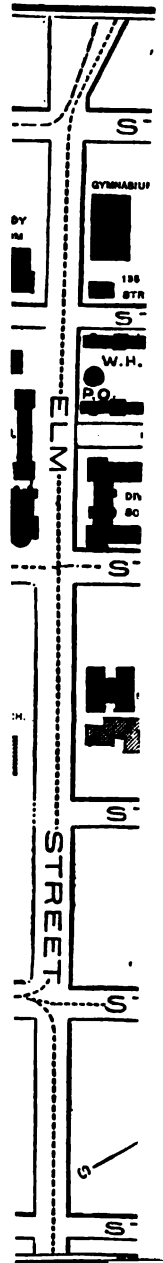
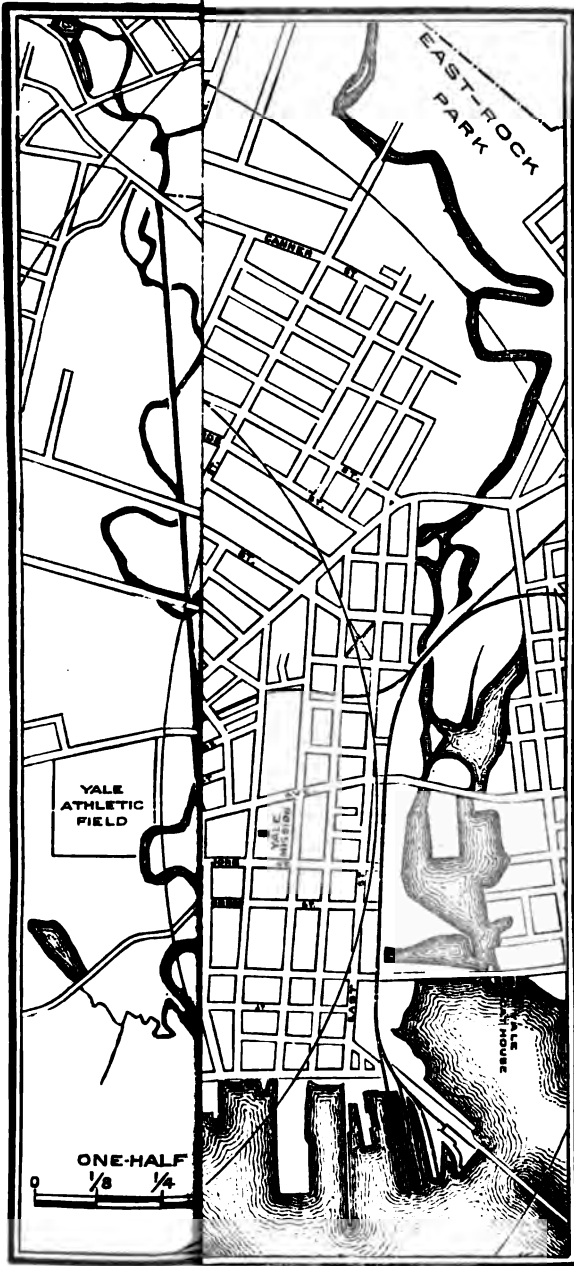
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YALE UNIVERSITY



1904-1905



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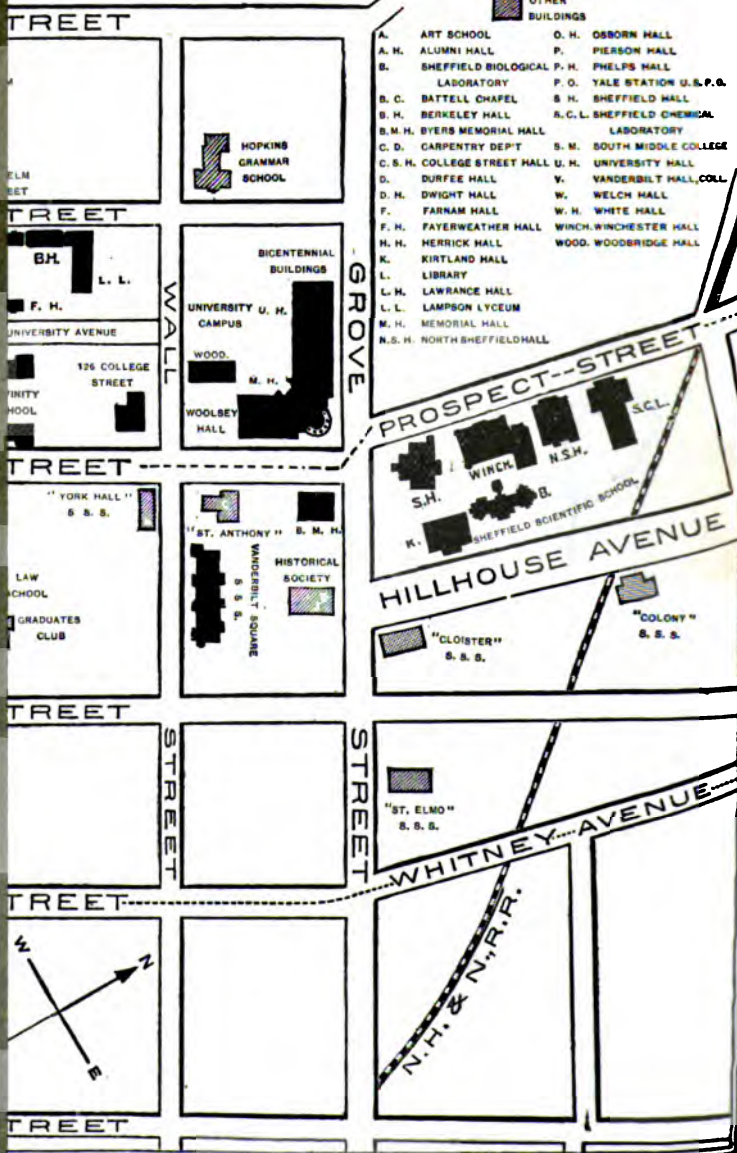
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ABBREVIATIONS



A. ART SCHOOL	O. H. OSBORN HALL
A. H. ALUMNI HALL	P. PIERSON HALL
B. SHEFFIELD BIOLOGICAL LABORATORY	P. H. PHELPS HALL
B. C. BATTELL CHAPEL	P. O. YALE STATION U.S.P.O.
B. H. BERKELEY HALL	S. H. SHEFFIELD HALL
B. M. H. BYERS MEMORIAL HALL	S. C. L. SHEFFIELD CHEMICAL LABORATORY
C. D. CARPENTRY DEPT	S. M. SOUTH MIDDLE COLLEGE
C. S. H. COLLEGE STREET HALL	U. H. UNIVERSITY HALL
D. DURFEE HALL	V. VANDERBILT HALL, COLL.
D. H. DWIGHT HALL	W. WELCH HALL
F. FARNAM HALL	W. H. WHITE HALL
F. H. FAYERWEATHER HALL	WINCH. WINCHESTER HALL
H. H. HERRICK HALL	WOOD. WOODEBRIDGE HALL
K. KIRTLAND HALL	
L. LIBRARY	
L. H. LAWRENCE HALL	
L. L. LAMPSON LYCEUM	
M. H. MEMORIAL HALL	
N. S. H. NORTH SHEFFIELD HALL	



GRADUATE SCHOOL
OF
YALE UNIVERSITY

COURSES OF INSTRUCTION

FOR

1904-1905



NEW HAVEN:

1904

CALENDAR

1904

- | | | |
|----------|-----------|--|
| 29 Sept. | Thursday | FIRST TERM begins. |
| 23 Nov. | Wednesday | THANKSGIVING RECESS begins, 1.20 P. M. |
| 25 Nov. | Friday | RECESS ends, 8 A. M. |
| 21 Dec. | Wednesday | FIRST TERM ends. |

Winter Vacation

1905

- | | | |
|----------|-----------|----------------------------------|
| 11 Jan. | Wednesday | SECOND TERM begins. |
| 19 April | Wednesday | SPRING RECESS begins, 1.20 P. M. |
| 27 April | Thursday | RECESS ends, 8 A. M. |
| 25 June | Sunday | Baccalaureate Sermon. |
| 28 June | Wednesday | COMMENCEMENT. |

Summer Vacation

- | | | |
|----------|-----------|--------------------|
| 28 Sept. | Thursday | FIRST TERM begins. |
| 20 Dec. | Wednesday | FIRST TERM ends. |
-

For information with regard to the Graduate School, not contained in this pamphlet, and also with regard to Fellowships and Scholarships (see pages 13 and 15), address the Dean,

Professor ANDREW W. PHILLIPS.

GRADUATE SCHOOL

FACULTY

ARTHUR TWINING HADLEY, LL.D., PRESIDENT

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ADDISON EMORY VERRILL, M.A., *Professor of Zoology*

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HENRY AUGUSTIN BEERS, M.A., *Professor of English Literature*

AUGUSTUS JAY DUBOIS, C.E., PH.D., *Professor of Civil Engineering*

BERNADOTTE PERRIN, PH.D., LL.D., *Professor of Greek Literature and History*

EDWARD SALISBURY DANA, PH.D., *Professor of Physics*

THOMAS DAY SEYMOUR, LL.D., *Professor of Greek*

CHARLES SHELDON HASTINGS, PH.D., *Professor of Physics*

FRANK AUSTIN GOOCH, PH.D., *Professor of Chemistry*

ALBERT STANBURROUGH COOK, PH.D., L.H.D., *Professor of English*

- WILLIAM BEEBE, M.A., *Professor of Mathematics and Instructor in Astronomy*
- GEORGE BURTON ADAMS, PH.D., LITT.D., *Professor of History*
- SAMUEL SIMONS SANFORD, M.A., *Professor of Applied Music*
- HENRY WALCOTT FARNAM, R.P.D., *Professor of Political Economy*
- EDWARD PARMELEE MORRIS, M.A., *Professor of Latin*
- HENRY ROSEMAN LANG, PH.D., *Professor of Romance Philology*
- RUSSELL HENRY CHITTENDEN, PH.D., LL.D., *Professor of Physiological Chemistry*
- JOHN HAYS HAMMOND, M.A., *Professor of Mining Engineering*
- SAMUEL LEWIS PENFIELD, M.A., *Professor of Mineralogy*
- HORACE LEMUEL WELLS, M.A., *Professor of Analytical Chemistry and Metallurgy*
- THOMAS DWIGHT GOODELL, PH.D., *Professor of Greek*
- EDWARD WASHBURN HOPKINS, PH.D., LL.D., *Professor of Sanskrit and Comparative Philology*
- ARTHUR HUBBELL PALMER, M.A., *Professor of German*
- HORATIO MCLEOD REYNOLDS, M.A., *Professor of Greek*
- FREDERICK MORRIS WARREN, PH.D., L.H.D., *Professor of Modern Languages*
- GEORGE MARTIN DUNCAN, LL.D., *Professor of Philosophy*
- E. HERSHEY SNEATH, PH.D., LL.D., *Professor of Philosophy*
- Rev. FRANK KNIGHT SANDERS, PH.D., D.D., *Professor of Biblical History and Archaeology*
- LOUIS VALENTINE PIRSSON, M.A., *Professor of Physical Geology*
- EDWARD GAYLORD BOURNE, PH.D., *Professor of History*
- GUSTAV GRUENER, PH.D., *Professor of German*
- CHARLES CUTLER TORREY, PH.D., D.D., *Professor of Semitic Languages*
- HORATIO WILLIAM PARKER, MUS.D., *Professor of Music*
- WILBUR LUCIUS CROSS, PH.D., *Professor of English*
- JOHN CHRISTOPHER SCHWAB, PH.D., *Professor of Political Economy*
- CHARLTON MINER LEWIS, PH.D., *Professor of English*
- WILLIAM LYON PHELPS, PH.D., *Professor of English Literature*
- ROBERT NELSON CORWIN, PH.D., *Professor of German*
- IRVING FISHER, PH.D., *Professor of Political Economy*
- JAMES PIERPONT, PH.D., *Professor of Mathematics*
- HANNS OERTEL, PH.D., *Professor of Linguistics and Comparative Philology*

PERCEY FRANKLYN SMITH, PH.D., *Professor of Mathematics*
JAMES WILLIAM TOUMEY, M.S., *Professor of Forestry*
CHARLES FOSTER KENT, PH.D., *Professor of Biblical Literature*
HENRY SOLON GRAVES, M.A., *Professor of Forestry*
HENRY CROSBY EMERY, PH.D., *Professor of Political Economy*
GUY STEVENS CALLENDER, PH.D., *Professor of Political Economy*
LAFAYETTE BENEDICT MENDEL, PH.D., *Professor of Physiological Chemistry*
HERBERT ERNEST GREGORY, PH.D., *Professor of Geology*

OTHER INSTRUCTORS

JOHN CHESTER ADAMS, M.A., *Instructor in English*
WILLIAM GILBERT ANDERSON, M.A., M.D., *Director of the Gymnasium*
Rev. BENJAMIN WISNER BACON, LITT.D., D.D., *Professor of New Testament Greek*
WILLIAM BACON BAILEY, PH.D., *Assistant Professor of Political Economy*
ERNEST HICKOK BALDWIN, PH.D., *Lecturer in History*
CECIL KITTREDGE BANCROFT, B.A., *Instructor in Latin*
SAMUEL EBEN BARNEY, C.E., *Assistant Professor of Civil Engineering*
JOSEPH BARRELL, PH.D., *Assistant Professor of Geology*
SAMUEL ELIOT BASSETT, B.A., *Tutor in Greek*
PAUL VICTOR CHRISTOPHER BAUR, PH.D., *Tutor in Classical Archaeology*
EDWARD AUGUSTUS BOWERS, B.A., LL.B., *Lecturer in Forest Law*
PHILIP EMBURY BROWNING, PH.D., *Assistant Professor of Chemistry*
HENRY ANDREWS BUMSTEAD, PH.D., *Assistant Professor of Physics*
WILLIAM HENRY CALLAHAN, M.D., *Instructor in Physiology*
CHARLES UPSON CLARK, PH.D., *Assistant Professor of Latin*
CHARLES CAMERON CLARKE, JR., B.A., *Assistant Professor of French*
WESLEY ROSWELL COE, PH.D., *Assistant Professor of Comparative Anatomy*
WILLIAM JAMES COMSTOCK, PH.B., *Instructor in Organic Chemistry*
ALBERT EUGENE CURDY, PH.D., *Instructor in French*
Rev. EDWARD LEWIS CURTIS, PH.D., D.D., *Professor of Hebrew*
CLIVE DAY, PH.D., *Assistant Professor of Economic History*
ARTHUR LYMAN DEAN, PH.D., *Assistant in Plant Physiology*

- GEORGE FRANCIS EATON, PH.D., *Instructor in Osteology*
 ALEXANDER WILLIAM EVANS, M.D., PH.D., *Assistant Professor of Botany*
 WILLIAM OLIVER FARNSWORTH, M.A., *Instructor in French*
 HOLLON AUGUSTINE FARR, M.A., *Tutor in German*
 HARRY BURR FERRIS, M.D., *Hunt Professor of Anatomy*
 HARRY WARD FOOTE, PH.D., *Instructor in Physical Chemistry*
 WILLIAM EBENEZER FORD, JR., PH.D., *Instructor in Mineralogy*
 ARTHUR SULLIVAN GALE, PH.D., *Instructor in Mathematics*
 CLYDE CHEW GLASCOCK, PH.D., *Instructor in German*
 WILLIAM ANTHONY GRANVILLE, PH.D., *Instructor in Mathematics*
 HERBERT EDWIN HAWKES, PH.D., *Assistant Professor of Mathematics*
 Rev. WILLIAM MILTON HESS, PH.D., *Lecturer in Philosophy*
 JAMES W. D. INGERSOLL, PH.D., *Assistant Professor of Latin*
 GEORGE SAMUEL JAMIESON, PH.B., *Instructor in Chemistry*
 HARRY BENJAMIN JEPSON, B.A., MUS.B., *Assistant Professor of Applied Music, and University Organist*
 TREAT BALDWIN JOHNSON, PH.D., *Instructor in Chemistry*
 CHARLES HUBBARD JUDD, PH.D., *Assistant Professor of Psychology, and in charge of the Psychological Laboratory*
 ALBERT GALLOWAY KELLER, PH.D., *Assistant Professor of the Science of Society*
 ANDREW KEOGH, *Lecturer in Bibliography*
 HENRY STANLEY KNIGHT, *Assistant Professor of Applied Music*
 HENRY BARRETT LEARNED, M.A., *Instructor in History*
 FREDERICK BLISS LUQUIENS, B.A., *Instructor in French and Spanish*
 GEORGE GRANT MACCURDY, M.A., *Lecturer in Anthropology*
 CLOYD NORTH MCALLISTER, PH.D., *Instructor in Psychology*
 KENNETH MCKENZIE, PH.D., *Instructor in Romance Languages*
 MAX MASON, PH.D., *Instructor in Mathematics*
 GEORGE REDINGTON MONTGOMERY, PH.D., *Lecturer in Philosophy*
 JOHN PEASE NORTON, PH.D., *Instructor in Political Economy*
 CHARLES GROSVENOR OSGOOD, JR., PH.D., *Instructor in English*
 ISAAC KING PHELPS, PH.D., *Instructor in Chemistry*
 Rev. FRANK CHAMBERLIN PORTER, PH.D., D.D., *Professor of Biblical Theology*
 EDWARD BLISS REED, PH.D., *Assistant Professor of English*

- LEO FREDERICK RETTGER, PH.D., *Instructor in Bacteriology*
OLIVER HUNTINGTON RICHARDSON, PH.D., *Assistant Professor of History*
CHALFANT ROBINSON, PH.D., *Lecturer on Commercial Treaties of the United States*
HENRY HOLLISTER ROBINSON, C.E., PH.D., *Instructor in Geology*
ROBERT KILBURN ROOT, PH.D., *Instructor in English*
STUART HENRY ROWE, PH.D., *Lecturer on Pedagogy*
ROBERT LOUIS SANDERSON, M.A., *Assistant Professor of French*
RUDOLPH SCHWILL, PH.D., *Instructor in Spanish*
JAY WEBBER SEAYER, M.A., M.D., *Medical Examiner in the Gymnasium*
DAVID STANLEY SMITH, B.A., MUS.B., *Instructor in the Theory of Music*
THOMAS CALHOUN STEARNS, PH.D., *Lecturer in Ancient Philosophy*
REV. GEORGE BARKER STEVENS, PH.D., D.D., LL.D., *Professor of Systematic Theology*
LEONARD MERRILL TARR, M.A., *Lecturer on Meteorology*
EDWY LYCURGUS TAYLOR, PH.B., *Instructor in Mechanical Drawing*
WILLIAM JAMES TAYLOR, PH.D., *Lecturer on the History of Education*
HON. WILLIAM KNEELAND TOWNSEND, D.C.L., *Professor of Contracts, Patents, and Admiralty Jurisprudence*
ISIDOR TROOSTWYK, *Assistant Professor of Applied Music, and Instructor in Violin-Playing*
RALPH GIBBS VAN NAME, PH.D., *Instructor in Chemistry*
WILLISTON WALKER, PH.D., D.D., *Professor of Ecclesiastical History*
CHARLES HEALD WELLER, B.A., *Lecturer on Greek Literature*
PHILIP PATTERSON WELLS, PH.D., *Lecturer in History*
SIDNEY ADAMS WESTON, PH.D., *Instructor in Biblical Literature*
HENRY LORD WHEELER, PH.D., *Assistant Professor of Organic Chemistry*
FREDERICK WELLS WILLIAMS, B.A., *Assistant Professor of Modern Oriental History*
EDWIN BIDWELL WILSON, PH.D., *Instructor in Mathematics*
ANDREW LINCOLN WINTON, PH.B., *Instructor in Proximate Organic Elements*
HENRY BURT WRIGHT, PH.D., *Tutor in Greek and Latin*

ADMINISTRATIVE COMMITTEE,

WITH CONSULTATION HOURS

ARTHUR TWINING HADLEY, LL.D., PRESIDENT,

Woodbridge Hall, daily, 8.30 A. M. to 1 P. M.

ANDREW WHEELER PHILLIPS, PH.D., DEAN, and *Professor of Mathematics*, 90 High street, daily, except Saturday, 10.30 A. M. to 12 M.

ARTHUR MARTIN WHEELER, LL.D., *Professor of History*,

C, Osborn Hall, Tuesday and Friday, 10.30-11.30 A. M.

CHARLES BRINCKERHOFF RICHARDS, M.A., *Professor of Mechanical Engineering*, 111 Winchester Hall, Friday, 10 to 11 A. M.

Rev. GEORGE TRUMBULL LADD, D.D., LL.D., *Professor of Philosophy*.

275 Lawrance Hall, Monday, Wednesday and Saturday, 12 M.

THOMAS DAY SEYMOUR, LL.D., *Professor of Greek*,

22 Phelps Hall, daily, 11 A. M. to 12 M.

ALBERT STANBURROUGH COOK, PH.D., L.H.D., *Professor of English*,

C, Osborn Hall, Tuesday, 11.20 A. M.; D, 135 Elm street, Tuesday, 4 P. M.

HENRY WALCOTT FARNAM, R.P.D., *Professor of Political Economy*,

43 Hillhouse av., daily, except Saturday, 2 to 3 P. M.

RUSSELL HENRY CHITTENDEN, PH.D., *Professor of Physiological Chemistry, and Director of the Sheffield Scientific School*, 3 Sheffield Hall,

daily, 9 A. M. to 12 M.

Rev. FRANK KNIGHT SANDERS, PH.D., D.D., *Professor of Biblical History and Archaeology, and Dean of the Divinity School*, 615 East

Divinity Hall, daily, 10 A. M. to 12.30 P. M.

GENERAL STATEMENT

ORGANIZATION

The Graduate School of Yale University is a section of the Department of Philosophy and the Arts, which was first formally organized in 1847 for scientific and graduate instruction, but now includes Yale College, the Sheffield Scientific School, the School of the Fine Arts, the Department of Music, and the Forest School.

The degrees of Doctor of Philosophy and Civil Engineer were first offered in 1860, the degree of Dynamical or Mechanical Engineer in 1873, that of Master of Arts (previously given without evidence of study) in 1874, and that of Master of Science in 1897.

The professors in the several sections of the Department of Philosophy and the Arts together constitute the Faculty of the Graduate School. The general oversight of graduate instruction and graduate students is entrusted to the Dean and the Administrative Committee, who may be called upon for information and advice. Students are expected to report to the Dean soon after reaching New Haven.

ADMISSION AND REGISTRATION

Graduates of this and other Colleges and Universities, and (in exceptional cases, by special permission) other persons of liberal education, who are at least eighteen years old, are received as students for longer or shorter periods, with or without reference to the attainment of a degree.

All graduate students who are not regularly enrolled in any other department of the University are required to register their names at the office of the Dean at the beginning of each year of study.

The degree of Doctor of Philosophy, with the courses of the Graduate School leading thereto, is open to candidates without distinction of sex.

FEES AND EXPENSES

The fee for instruction is generally one hundred dollars per year ; but it may be more, or less, according to the courses pursued and the amount of instruction received.

A special fee of five dollars is charged to those who use the Gymnasium, (and one of two dollars to those admitted to the use of the College Reading-room.)

Board is obtained at prices varying from three and a half to eight dollars a week. The average price is under five dollars.

A list of suitable rooms is kept at the Dean's office.

INSTRUCTION

Courses of study are offered in the following departments :

- I. PSYCHOLOGY, ETHICS, AND PHILOSOPHY.
- II. ECONOMICS, SOCIAL SCIENCES, HISTORY, AND LAW.
- III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.
- IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY.
- V. MODERN LANGUAGES AND LITERATURES.
- VI. NATURAL AND PHYSICAL SCIENCE.
- VII. MATHEMATICS.
- VIII. THE FINE ARTS.
- IX. MUSIC.
- X. PHYSICAL EDUCATION.

Instruction is given partly by lectures, partly in recitations and by oral and written discussions, partly by directing courses of reading, and partly by the direction of work in the laboratories and with instruments.

The attention of teachers who desire to fit themselves more thoroughly for a higher grade of professional work is called to the advantages offered by this department for pedagogical instruction and discipline. In addition to the special and advanced study of the subjects in which the graduate student desires instruction, and the pursuit of courses in psychology, ethics, philosophy, and of other

courses cognate with pedagogy, opportunity is afforded to observe the actual practice in the class-room, as well as the organization of the different departments of the University and their methods of work.

DEGREES

The DEGREE OF DOCTOR OF PHILOSOPHY is conferred upon those students who show the results of resident graduate work by a thesis giving evidence of high attainment and power of investigation, and by an examination on studies whose grade and amount meet the approval of the Faculty. Under ordinary circumstances two or more years' work in residence will be required, but in exceptional cases work of equal grade at another University may take the place of a year's residence here. The thesis must be deposited at the Library for public inspection, not later than May 1. A good knowledge of Latin, German, and French is required in all cases, unless, for some very exceptional reasons, the candidate be excused by the Faculty. Evidence of sufficient attainments in these languages must be furnished the Dean at least two years before the degree is given. The fee for instruction is one hundred dollars per year. The fee for graduation is ten dollars.

The DEGREE OF MASTER OF ARTS is conferred on Bachelors of Arts of Yale College (and on Bachelors of Arts of other colleges whose course of study is equivalent to that of Yale College), who have given to the College Faculty evidence of satisfactory progress in liberal studies after receiving their first degree. Such evidence may be furnished by one year's systematic study (not professional) in New Haven, under the direction of the College Faculty, followed by an examination. Graduates of other colleges can obtain the degree only by residence as thus described. The charge for instruction

is usually one hundred dollars per year, with a fee of ten dollars for the degree.

Such Bachelors of Arts of *Yale College* as may not choose to reside at the College for study may, at any time not less than three years after graduation, show, in either of the two following ways, that they have spent a year in liberal (and non-professional) study, and are worthy of recommendation for this degree. (1) Such candidates may apply to the Faculty for the designation of a course of study, on which an examination shall be taken. This application must be accompanied by a fee of twenty-five dollars. (2) Or a candidate may submit as evidence of his fitness for this degree a printed essay, for the examination of which a fee of twenty-five dollars (to be paid in advance) is required. An additional fee of ten dollars will be charged in all cases for the degree.

A committee of the Faculty is appointed (consisting for the present year of Professors Wheeler and Phillips), to whom candidates for this degree must submit their proposed courses of study for approval by the end of October in each year; and the evidence of a year's study must be submitted to the same committee by June 1.

The DEGREE OF MASTER OF SCIENCE is conferred on graduates of this or other universities, of two years' standing or upwards, who have taken their first degree in science and who pursue successfully a higher course of study in science under the direction of the Governing Board of the Sheffield Scientific School. Such a course involves at least one year of resident graduate study followed by an examination and presentation of a satisfactory thesis in some department of science. A committee of the Faculty is appointed, to whom candidates for this degree must submit their proposed courses of study for approval before the end of October of each year.

placed in the Philosophical Seminary room, and consists of 1,500 volumes, to which additions are constantly being made, besides the current philosophical and psychological periodicals. It aims to afford all the advantages of a well-selected consulting library for the students of philosophy.

The PSYCHOLOGICAL LABORATORY of the Department is thoroughly equipped for both instruction and original research. In addition to the provisions for work in experimental psychology, there are sections for work in experimental pedagogy. Each student pursuing investigations is provided with space and apparatus. The results of accepted investigations are published in the *Studies from the Yale Psychological Laboratory*.

The PHILOSOPHICAL CLUB, composed of the instructors in the Department and all graduate students who take courses in philosophy, holds regular meetings fortnightly, on Tuesday evening. It is designed to afford opportunity both for the presentation and discussion of the results of original research by its members, and also for hearing addresses and papers from distinguished authorities on philosophical subjects, who are not connected with the Department as teachers. Addresses have been delivered before the Club by Professors Lloyd Morgan, John Watson, W. T. Harris, J. G. Schurman, William James, J. McKeen Cattell, Josiah Royce, Borden P. Bowne, William Caldwell, John Dewey, J. Mark Baldwin, and others.

INTRODUCTION TO PHILOSOPHY

Professor LADD :—

[I *Outlines of Philosophy*.

2 hrs.

Lectures, with required reading, upon the principal topics in systematic philosophy, with a view to show its nature, method, and the various solutions to its problems given by the different schools of philosophy.

Omitted in 1904-1905.]

class of 1842, and of her son, John Addison Porter, of the class of 1878, by the gift of ten thousand dollars. The income is awarded annually to a graduate of the Academic Department or of the Sheffield Scientific School, selected for distinguished excellence and promise in the Department of English.

The LOOMIS FELLOWSHIP in Physics was established in 1902, by Professor Francis E. Loomis, class of 1864, Yale College, by the gift of ten thousand dollars. This Fellowship is open to the graduates of the Scientific and Academic Departments of Yale University, and to graduates of other Universities who have spent at least one year in the study of Physics, in the Graduate School of Yale. It is granted to the candidate who passes the best competitive examination in Physics (descriptive, mathematical, and laboratory practice). The holder of this fellowship must be a candidate for the degree of Doctor of Philosophy, and must make Physics his chief study.

The YALE ALUMNI ASSOCIATION OF CALIFORNIA FELLOWSHIP of three hundred dollars is given to a graduate of one of the California Universities, pursuing studies at Yale in the Graduate School. The incumbent is selected by the Association.

The following Fellowships are, by the terms of the donations, open only to graduates of Yale College :

The DOUGLAS FELLOWSHIP.

The SOLDIERS' MEMORIAL FELLOWSHIP. .

The SILLIMAN FELLOWSHIP.

The JOHN SLOANE FELLOWSHIP.

The SCOTT HURTT FELLOWSHIP.

The ELLEN BATTELL ELDRIDGE FELLOWSHIPS (two).

The MACY FELLOWSHIP.

The LARNED FELLOWSHIPS (three).

The FOOTE FELLOWSHIPS (three).

The CUYLER FELLOWSHIP.

SCHOLARSHIPS

TWENTY SCHOLARSHIPS, yielding one hundred dollars each, are open to graduates of all colleges.

The following Scholarships are open only to graduates of Yale College :

The **CLARK SCHOLARSHIPS**, and

The **W. W. DE FOREST SCHOLARSHIP**.

The **DANIEL C. EATON GRADUATE SCHOLARSHIP IN BOTANY** is endowed with the income of a fund of two thousand dollars given by Mrs. Eaton in commemoration of her husband, the late Professor Daniel C. Eaton. This scholarship will be open for competition to members of the Senior classes in the Academical and Scientific Departments, on conditions to be prescribed by the Governing Board of the Sheffield Scientific School.

Six **SHEFFIELD SCHOLARSHIPS** of \$100 each (covering the charges for tuition) are awarded, on application, to those members of the graduating class of the Sheffield Scientific School who have attained high proficiency in the special studies of their respective courses, and who desire to spend one or more years in graduate study in the School. Each scholarship will be available for one year only. Application for these scholarships must be made in writing on or before June 1st to the head of the department to which the student belongs, with a statement as to the character of the graduate study to be pursued.

Candidates for appointment to Fellowships and Scholarships should send their applications, accompanied by letters of recommendation and other evidence of the excellence of their work already accomplished, to the Dean, Professor Andrew W. Phillips, not later than April 15.

The **ARTHUR TWINING HADLEY SCHOLARSHIP** yields an income of \$225 a year, which sum is awarded annually to one or more students of the University, to assist in the publication of meritorious theses or other results of investigation.

The sum of fifty dollars is appropriated by the University towards defraying the cost of publication of each thesis submitted for the degree of Doctor of Philosophy, which is recommended for such purpose by the expert readers of the thesis in question, provided such thesis is actually published, in separate form, by the first day of January following the graduation of the candidate, and that fifty copies have been presented to the University.

PRIZES

The JOHN A. PORTER PRIZE, of the value of two hundred and fifty dollars, established by the Kingsley Trust Association in 1872, is offered for the best English Essay on a prescribed subject. Competing essays must be handed in at the close of the Spring recess, and the award will be announced on Commencement Day. Any person who has been pursuing a regular course for a degree in any Department during the whole of the current College year, may compete for this prize. If none of the competing essays is of sufficient merit, the prize will not be awarded.

The COOK PRIZE IN POETRY, of the value of fifty dollars, is offered by Professor Cook for the best unpublished poem. Competition is open to students of the University in all departments. If none of the competing poems is of sufficient merit, the prize will not be awarded. Before receiving the prize, the winner must print the successful poem in a manner acceptable to the donor. The poems, each of which should be signed by an assumed name, and accompanied by a sealed envelope containing the writer's full name, will be due on April 1, and may be handed in at the Chittenden Library.

The JACOB COOPER PRIZE IN GREEK PHILOSOPHY, established in 1900 by the gift of five hundred dollars from Professor Albert S. Cook, is awarded in any year by the

departments of Greek and Philosophy to such student of the University, being a person of high attainments and ability, as shall pass the best examination in the *Metaphysics* and *Organon* of Aristotle, and shall submit the best thesis upon some topic drawn from one of these works and announced publicly at a convenient time in advance.

The GEORGE WASHINGTON EGGLESTON HISTORICAL PRIZE, the income of one thousand dollars, founded by George Washington Eggleston, Esq., of Eardisley, Herefordshire, England, will be awarded to any student of the University who shall during the ensuing year, by research, discover any new fact or facts relating to American History ; or shall from existing data bring to bear any information, or criticism, sufficiently notable to be useful from a literary point of view.

COURSES OF INSTRUCTION

Courses marked with an asterisk (*) are undergraduate courses ; they are open to graduate students who have the consent of the instructor and the approval of the Faculty.

The number of hours stated means, when not otherwise specified, hours of exercise, lectures, or recitations, each week through the year.

For UNIVERSITY PRIVILEGES, including information respecting RESEARCH CLUBS, LIBRARIES, LECTURES, CONCERTS, etc., see pages 131-135.

COURSES OF INSTRUCTION

I. PHILOSOPHY

GEORGE T. LADD, D.D., LL.D.	GEORGE B. STEVENS, D.D., LL.D.
E. WASHBURN HOPKINS, LL.D.	GEORGE M. DUNCAN, LL.D.
E. HERSHEY SNEATH, Ph.D., LL.D.	CHARLES H. JUDD, Ph.D.
THOMAS C. STEARNS, Ph.D.	CLOYD N. McALLISTER, Ph.D.
GEORGE R. MONTGOMERY, Ph.D.	STUART H. ROWE, Ph.D.
WILLIAM J. TAYLOR, Ph.D.	WILLIAM M. HESS, Ph.D.

COURSES IN THIS DEPARTMENT are offered in Introduction to Philosophy, Psychology, Logic and Epistemology, Ethics, Aesthetics, Metaphysics, Philosophy of Religion, Pedagogics, History of Philosophy, and Philosophical Criticism.

For COGNATE COURSES, of especial value to students in this Department, in Physiology, Histology and Biology, see course VI, 57 f.; in Anthropology and Social Science, see course II, 1 f.; in Evolution, see course II, 32; in Chemical Theory, see course VI, 29; in Plato, see course IV, 6, 19 and 29.

The UNDERGRADUATE CLASSES in Psychology, Logic, and Ethics may be freely attended by graduate students in order to study the methods of instruction in these subjects employed in Yale College.

The PHILOSOPHICAL SEMINARY ROOM, 4 Herrick Hall, is fitted up for the use of graduate students in Philosophy. It contains the Departmental Library, and may be utilized for purposes of study at all times. Keys are furnished on application to Professor Ladd to all graduate students taking courses in the Department.

The HEALY PHILOSOPHICAL LIBRARY, founded by a gift of \$10,000 from Mrs. Susie Healy Camp, of Hartford, as a memorial of her father, William Arnold Healy, is a departmental library for the Department of Philosophy. It is

placed in the Philosophical Seminary room, and consists of 1,500 volumes, to which additions are constantly being made, besides the current philosophical and psychological periodicals. It aims to afford all the advantages of a well-selected consulting library for the students of philosophy.

The PSYCHOLOGICAL LABORATORY of the Department is thoroughly equipped for both instruction and original research. In addition to the provisions for work in experimental psychology, there are sections for work in experimental pedagogy. Each student pursuing investigations is provided with space and apparatus. The results of accepted investigations are published in the *Studies from the Yale Psychological Laboratory*.

The PHILOSOPHICAL CLUB, composed of the instructors in the Department and all graduate students who take courses in philosophy, holds regular meetings fortnightly, on Tuesday evening. It is designed to afford opportunity both for the presentation and discussion of the results of original research by its members, and also for hearing addresses and papers from distinguished authorities on philosophical subjects, who are not connected with the Department as teachers. Addresses have been delivered before the Club by Professors Lloyd Morgan, John Watson, W. T. Harris, J. G. Schurman, William James, J. McKeen Cattell, Josiah Royce, Borden P. Bowne, William Caldwell, John Dewey, J. Mark Baldwin, and others.

INTRODUCTION TO PHILOSOPHY

Professor LADD :—

[1 *Outlines of Philosophy*.

2 hrs.

Lectures, with required reading, upon the principal topics in systematic philosophy, with a view to show its nature, method, and the various solutions to its problems given by the different schools of philosophy.

Omitted in 1904-1905.]

Professor DUNCAN :—

[2 *Encyclopaedia of Philosophy.*

A series of informal lectures on the study of philosophy, and the literature of its various branches.

Omitted in 1904-1905.]

Professor SNEATH :—

*3 *Introduction to Philosophy.* 2 hrs.

This course of lectures is designed to present, in an elementary way, the principal philosophical problems. It is a general introduction to the more special or advanced study of philosophy. The order of topics followed will be based upon some book giving a general treatment of the subject, supplemented by other reading.

[Monday and Wednesday, 9.30 A. M., A. O.]

PSYCHOLOGY

Professors LADD, DUNCAN and SNEATH :—

4 *Research Work in Analytical Psychology and the Philosophy of Mind.*

Consultations. Original investigations are undertaken under the direction of the instructors. Recently published examples of such researches are: *The Psychology of Expectation* [Psychological Review Monograph Supplement, No. 20], by Clara M. Hitchcock, Ph.D., Professor in Lake Erie College; *A Psychological Study of the Founder of Mormonism* [Dodd, Mead & Co., N. Y.], by I. Woodbridge Riley, Ph.D., Professor in the University of New Brunswick.

Professor LADD :—

[5 *Psychology.* 2 hrs.

In a course of lectures, with required readings, the phenomena, laws and development of the mental life will be discussed. The study will be designed to afford an intelligent and comprehensive view of the nature and growth of the human Mind.

Omitted in 1904-1905.]

Professor DUNCAN :—

6. *Advanced General Psychology.* 2 hrs.

An advanced course in General Psychology, which aims at a detailed study of the principal phenomena of mental life from the modern scientific standpoint, with a view to the formation of an intelligent and comprehensive theory of the mind's nature and functions. In connection with the course James's *The Principles of Psychology* will be read and critically discussed. Papers, discussions and lectures.

[Monday, 8.30–10.00 A. M., B. O.]

Professor DUNCAN, Assistant Professor JUDD, and Dr. McALLISTER :—

7. *Contemporary Psychology.* 1 hr.

Seminary meeting once every two weeks for two hours. The current Journals of Psychology and of cognate subjects will be reviewed. The purpose of this course is to acquaint members of the Seminary with contemporary work and tendencies of thought in psychology and immediately related subjects, and to give training in the preparation of reviews.

[Hour to be arranged.]

Assistant Professor JUDD :—

[8] *Genetic Psychology.* 1 hr.

A course of lectures and readings dealing with the facts and principles of mental development. A comparative study will be made of mental development as exhibited in adult life and in the child. Animal consciousness, race consciousness, and the results of biological study of physical development, will be treated in so far as they throw light on the main problem. This course deals with those aspects of psychology most closely related to practical pedagogy.

Omitted in 1904–1905.]

Assistant Professor JUDD and Dr. McALLISTER :—

9. *Experimental Psychology (Laboratory Course).* 2 hrs.

A course dealing with the methods and results of experimental investigation of mental phenomena. Two hours a week will be devoted to laboratory exercises. In this part of the course each member of the class will perform a series of typical ex-

periments selected so as to familiarize the student with all the essential subjects belonging to experimental psychology. The third hour each week will be devoted to a critical discussion of the methods employed in the laboratory exercises, of the results obtained, and of the significance of each experiment for systematic psychology. This part of the course will consist of lectures, reports and general class discussions.

[Hours to be arranged.]

Assistant Professor JUDD :—

- 10 *Psychology (Experimental Problems).* 3 hrs.

This course is designed for advanced students who are preparing to undertake psychological investigations. It will consist of laboratory exercises and lectures. Three problems will be taken up in the course of the year, and will be made subjects of thorough investigation in the laboratory exercises. The lectures will present a brief historical survey of certain lines of psychological investigation and will aim to indicate the directions in which new investigations are required.

[Hours to be arranged.]

Assistant Professor JUDD and Dr. McALLISTER :—

- 11 *Experimental Psychology (Research).* 4 hrs.

Graduate students who have taken courses in general and experimental psychology may make use of the facilities of the laboratory for carrying on original researches on such subjects as they may choose after consultation with the instructor in charge of the laboratory. All students engaged in researches are expected to exchange a limited amount of time with other investigators in the laboratory, in order to insure trained subjects for all of the researches. The results of accepted original researches carried on in the laboratory are published in the *Studies from the Yale Psychological Laboratory*.

Dr. McALLISTER :—

- 12 *Psychology (Laboratory Equipment).* 1 hr.

This course is designed for those who are preparing to teach psychology, and who wish to become familiar with the selection and construction of apparatus, and the practical organization of a laboratory. Practical exercises in the construction of apparatus in wood and in metal will be given in the workshop. Typical

lists of apparatus will be presented and methods of laboratory installation will be illustrated and discussed, with special reference to the needs of small laboratories. Especial attention will also be given to the selection of inexpensive apparatus and the performing of simple experiments, suitable for illustrative purposes in teaching the elements of psychology in normal schools, and in small colleges which do not possess a psychological laboratory.

[Friday, 4.00 P. M., H. H.]

Dr. MONTGOMERY :—

[13 *Recent German Psychology in German.* 2 hrs.

The class will read as much as possible of Ebbinghaus's *Psychologie*, and also extracts from other recent German psychologists; Jodl, Wundt, Brentano, Münsterberg, Külpe, Stumpf, and others. The principal object of the course is to obtain a reading knowledge of the German psychologists; at the same time the attempt will be made to set forth in some detail through lectures and discussions the differences in their positions.

Omitted in 1904-1905.]

ETHICS

Professor LADD :—

[14 *Philosophy of Conduct.* 2 hrs.

The principal topics of ethics will be discussed with a view to the formation of an intelligent and comprehensive theory of man's moral nature and development. Among these topics especial attention will be given to the following :—the origin and value of the feeling of moral obligation, the sources of ethical judgments, the nature and proofs of moral freedom, the classifications and character of the different forms of virtuous living, the unity of virtue, the validity and universality of moral law, the nature of the moral ideal, and the nature and ground of the morally Good, or the Right.

Special attention will be directed throughout to the self-discipline and ethical aspects of the teacher's work. The exercises will consist, in general, of a lecture, to be followed by a paper and discussion by the class.

Omitted in 1904-1905.]

Professor SNEATH :—

- 15 *Systematic Ethics.* 2 hrs.

A study of the main problems of the philosophy of conduct—the nature of the moral self, the freedom of the will, the nature and grounds of moral relations, etc. Works representing the various types of ethical theory will be critically read. The course will be based on Sidgwick's *Methods of Ethics*.

- 16 *History of Modern Ethics.* 2 hrs.

This course traces the development of modern ethical thought from Hobbes to the present time. The course will deal primarily with British ethics. However, German ethical thought from Kant to Schopenhauer will be carefully considered. Lectures and elaborate papers.

[Tuesday, 2.30–4.00 P. M., A, O.]

- 17 *Ethical Seminary.* 2 hrs.

Research work along specific ethical lines will constitute the work of the seminary, the subjects varying from year to year. For the year 1904–1905 the work of the class will consist of researches in the field of the first period of Modern Ethics.

[Wednesday, 2.30–4.00 P. M., A, O.]

For other courses dealing with Ethics, see courses 26, 41, 45, 46 and 48.

LOGIC AND EPISTEMOLOGY

Professor LADD :—

- [18 *Kant Seminary.* 2 hrs.

The entire year will be spent in a thorough, critical study of Kant's *Critique of Pure Reason*. The work will be done by the students themselves, under the direction of the professor; and each member of the class will be, in turn, responsible for an elaborate paper, interpreting and criticizing the positions of the author of the *Critique*,—to be followed by questions and discussions by the class.

Omitted in 1904–1905.]

Professor DUNCAN:—

[19a *The Principles of Logic.* 1 hr. 1st half-year.

A course treating of the more important problems connected with the nature and forms of reasoning and the conditions of proof. This course should be followed by course 19b.

Omitted in 1904-1905.]

Assistant Professor JUDD:—

[19b *Scientific Method.* 1 hr. 2d half-year.

A course in the methods of the sciences with especial reference to the assumptions and criteria of inductive reasoning.

Omitted in 1904-1905.]

Professor DUNCAN:—

20 *Epistemology.* 2 hrs.

A systematic course, both critical and constructive, in the Philosophy of Knowledge. All the important problems of epistemology will be considered:—knowledge as a mental process (the nature or psychology of knowledge); the relation of experience and reason (the origin of knowledge); phenomenalism and epistemological realism (the reality of knowledge of self, things, God); agnosticism and scepticism (the validity of knowledge); etc. Lectures, papers and discussions.

[Friday, 10.00-11.30 A. M., B. O.]

[21 *Philosophical Scepticism.* 2 hrs.

An historical and critical examination of scepticism as revealed in the history of speculative thought, with especial reference to the determination of the causes, grounds, and limits of scepticism, and the construction of a valid theory of knowledge. The course will include a study of the scepticism of the Sophists; the Earlier and Later Pyrrhonists; the Middle and New Academies; the scepticism of Augustine and Descartes; of Hume and Kant; the positivism of Comte, Mill, and Lewes; the relativism of Hamilton and Mansel; and the agnosticism of Spencer, etc. Flint's *Agnosticism* (Charles Scribner's Sons, 1903) will be read in connection with the course.

Omitted in 1904-1905.]

For other courses dealing with Epistemology, see courses 22, 26, 28, 40, and 49.

METAPHYSICS

Professor LADD :—

- 22 *Systematic Metaphysics.* 2 hrs.

The principal metaphysical conceptions—such as Space, Time, Causation, Number, Substance, Quality, Relation, etc.—will be thoroughly discussed; and the attempt will be made to unite them in a harmonious view of the physical world and of human life. This will involve a careful study of such themes as Matter and Spirit, Change and Development, the Absolute and the Relative, and God and the World. Most of the work will be research, to be done by the class and presented in the form of elaborate papers for criticism and discussion.

[Thursday, 4.00–5.45 P. M., 4 H. H.]

- 23 *Philosophy of Mind.* 2 hrs.

This course is designed to assist in forming intelligent conceptions as to the nature, reality, genesis, evolution, and destiny of the human mind; its relations to the body; and the different theories of materialism, idealism, dualism, etc.

[Monday, 7.45–9.15 P. M., 4 H. H.]

Professor SNEATH :—

- [24 *Philosophy of Mind.* 2 hrs.

Beginning with the facts and laws established by empirical psychology, this course aims at the construction of a metaphysic of mind. The following are some of the subjects to be treated: The concept of mind; the reality, nature, genesis, and destiny of mind; the relations of mind and body; materialistic objections, etc. The latter part of the year will be devoted to a study of the history of the philosophy of mind from Descartes to Kant.

Omitted in 1904–1905.]

Dr. MONTGOMERY :—

- 25 *The Philosophy of Nature.* 1 hr.

A course of lectures including the following topics: the demarcation between the nature sciences and the spirit sciences; naturalism—hylozoism, atomism, materialism, ideology, positivism, evolutionism, pan-psychism; the physical concepts of substance, matter, energy, etc.; the philosophical bearing of the particular sciences—mathematics, mechanics, physics, chemistry, biology, physiology, sociology, and anthropology.

[Thursday, 11.30, A. O.]

PHILOSOPHY OF RELIGION

Professor LADD :—

26 *Philosophy of Religion.* 2 hrs.

A study of the phenomena of man's religious life and development with a view to discover the laws which prevail in its history, the nature of the mental reactions from which religion springs, and the expressions in religious dogma and worship. The principal features of the animistic religions, such as Fetishism, Totemism, Shamanism, Theriolatry, etc., of Ancestor-worship, and the higher forms of Nature-worship, will be presented; and the greater World-religions—Buddhism, Confucianism, Islam, Judaism, and Christianity—will be discussed from the historical and psychological points of view.

The lectures will be supplemented by required readings.

[Monday and Wednesday, 4 P. M., A. O.]

[27 *Philosophy of Religion.* 2 hrs.

A continuation of the preceding course in which the principal conceptions of religion are subjected to critical and reflective examination from the point of view of philosophy:

Omitted in 1904-1905.]

[28 *Philosophy of the Christian Religion.* 2 hrs.

A course of lectures, with papers and discussion by the class, treating of the origin, nature, and development of Religion in general, and of the place which Christianity occupies among the great world-religions. This Introduction will be followed by a discussion of the special relations in which Christianity stands to Judaism, of the historical and rational evidences for the truths taught by its Founder, of its essential religious and ethical conceptions, and the more important historical modifications which it has since undergone; and, finally, of its influence upon race-culture, and its claims to universality.

Omitted in 1904-1905.]

Professor STEVENS :—

29 *The Grounds of Theistic and Christian Belief.* 1 hr.

A discussion of the principal forms of the theistic argument, and of their application to the defense of Christianity against current objections.

[Wednesday, 8.30 A. M., E. D.]

- [30] *The Philosophy of Religion.* 1 hr. 1st term.

This course will be based on Sabatier's *Outlines of a Philosophy of Religion*, and will be supplementary to the course in Theism (course 29).

Omitted in 1904-1905.]

- [31] *The History of the Philosophy of Religion.* 1 hr. 2d term.

A sketch of the theories regarding the nature and grounds of religious belief which are involved in the principal modern systems of philosophy.

Omitted in 1904-1905.]

Professor HOPKINS:—

- [32] *Comparative Religion.* 1 hr.

A course of weekly lectures through the year. These lectures take up the study of religion from the comparative point of view, treating of the underlying principles of religion as shown in the religious phenomena of different nations and races, from lower to higher forms of religious expressions. The course is divided into two parts. The first part, which will continue through the first term and a few weeks of the second term, will deal with the general principles of religious evolution. The second part, occupying the remainder of the second term, will be devoted to the study of special religions which illustrate these principles, the religions of China, India, Persia, Babylon, Egypt, etc. The lectures are open to all graduate students, members of the theological school, and Academic Junior and Senior classes.

Omitted in 1904-1905.]

PEDAGOGICS

Dr. ROWE:—

- [33] *Systematic Pedagogy.* 1 hr.

This course will give a general survey of the field of education. The relation of pedagogy to allied subjects, and the fundamental aims, principles and methods of education in organization, discipline and instruction will be discussed. The course thus consists of two parts: (1) *educational foundations*, and (2) *the methodology of education*. The subjects will be considered in both their theoretical and practical aspects. Pains will be taken to acquaint the student with the most helpful books in

the wide range of educational literature. Papers and collateral reading will be required.

This course is intended both for those who wish some acquaintance with this department of knowledge and for those who intend to teach.

Omitted in 1904-1905.]

34 *Popular Educational Maxims and their Applications.* 1 hr.

A certain indefiniteness has always clouded most of our popular educational maxims. In many cases they overlap and in a few even contradict each other. It is intended in this course to discuss in a practical way those maxims of first importance to the teacher with a view to determining on a scientific basis the limits of their validity and the extent to which they admit of application in the school.

[Saturday, 9.30 A. M., C, O.]

35 *School Organization, Equipment and Management.* 1 hr.

An opportunity is offered a limited number of students to study the business side of schools of this vicinity. Three hours a week of observation will be required and record kept in notebooks. There will be discussions on the value and economy of the various devices seen.

Dr. McAILLISTER :—

36 *Experimental Pedagogy.* 1 hr.

A summary of the results of experimental methods as applied to educational subjects. The topics treated will include: training of the senses, observation, memory, quickness of perception and thought, writing, drawing, fatigue, and study of children.

[Saturday, 11.30 A. M., 2 H. H.]

Dr. W. J. TAYLOR :—

37 *History of Education.* 2 hrs.

This course will comprise lectures, readings, and reports. It has four aims; the study of educational practices and institutions; the study of educational theories; the bearing of past experience on modern problems; education as an aspect of social development. It is especially, but not exclusively, adapted to those who have a professional interest in educational work.

[Tuesday, 3 P. M. and Friday, 5 P. M., B, O.]

38 *Philosophical Foundations of Education.* 1 hr.

This course will examine certain philosophical conceptions of present interest with the purpose of determining their bearings upon a theory of education. Among those considered will be evolution, the psychology and metaphysics of the will, habit formation, the social and ethical aspects of education, etc. While the practical nature of education will receive due stress, yet the need of ultimate principles as the basis of rational procedure will be constantly emphasized, the aim being to develop a workable philosophy of education. The course will include lectures, assigned readings, and papers.

[Saturday, 9.30 A. M., C, O.]

For a course on Religious Education, see Prof. Brastow's course on *Christian Pedagogy* offered to divinity students. For other courses dealing with Pedagogics, see courses 5, 6, 12, and 14.

HISTORY OF PHILOSOPHY

Professor DUNCAN :—

*39 *Ancient Philosophy.* 2 hrs.

A study of the history of philosophy from its origin among the Greeks down to the opening of the Modern Period, with cursory reading of selected specimens of the philosophical literature of the periods studied. Especial attention will be given in Greek philosophy to Plato and Aristotle and the post-Aristotelian schools.

[Tuesday and Thursday, 9.30-10.30 A. M., A, O.]

40 *Modern Philosophy.* 3 hrs.

A critical study of the systems of speculative thought from Descartes to the present time, especially of the great systems of the XVIIth and XVIIIth centuries, with cursory reading of philosophical masterpieces from Descartes to Kant: Descartes' *Method and Principles of Philosophy*, pt. I; Bacon's *Novum Organum*; Spinoza's *Ethics*—selections; Locke's *Essay on Human Understanding*—selections; Leibnitz's *Monadology and Philosophical Opuscles*; Berkeley's *Principles of Human Knowledge*; Hume's *Inquiry concerning Human Understanding*; Reid's *Inquiry into the Human Mind*; Kant's *Prolegomena to any Future Metaphysics*. Two hours are devoted to expository and critical lectures; the third hour (which may be changed to two hours, if desired) to the presentation and discussion of papers by the

students, and to the informal consideration of important problems, especially of those relating to the philosophy of knowledge.

[Tuesday, Thursday, and Saturday, 8.30 A. M., A, O.]

Dr. TAYLOR :—

41 *Plato's Dialogues.* 1 hr.

The more important Dialogues will be read in translation and discussed. Plato will be studied as poet, philosopher, and social reformer, special consideration being given to the political and educational theories presented in the Republic and Laws. Due emphasis will be laid upon his position as the purest representative of the philosophical spirit of Greece, as the chief influence in determining the idealistic phase of subsequent speculation, and as a permanent incentive to philosophical thought.

[Saturday, 10.30 A. M., B, O.]

Dr. HESS :—

42 *The Philosophical Writings of Cicero.* 1 hr.

A study, in the light of modern reflection on the same subjects, of Graeco-Roman eclectic thought on the problems of philosophy as contained in the philosophical writings of Cicero. The following works of Cicero will be read in the best renderings available: *de Finibus*, *de Natura Deorum*, *de Officiis*, *Academica*, *Tusculanae Disputationes*.

[Monday, 9.30 A. M.]

[The two following courses may be taken either as studies in philosophy or as studies in Greek. Philological discussions will be introduced into both these courses in so far as such discussions may be necessary to a clear understanding of the thought involved.]

Dr. STEARNS :—

43 *Pre-Socratic Philosophy.* 2 hrs.

The sources and remains of the earliest Greek philosophy are critically examined and interpreted with a view to explaining the origin and first developments of that line of reflective thinking which has had most influence upon modern scientific and philosophical ideas and problems.

[Tuesday and Thursday, 10.30 A. M., B, O.]

44 *Aristotle's Metaphysics.* 2 hrs.

Selected chapters in the *Metaphysics* will be translated and interpreted. Especial emphasis will be laid upon the new and enduring conceptions which underlie Aristotle's thinking. The effort will be constantly made to understand the philosophical thought of the author, and to illustrate and criticise it by comparison with the now current thought on the same topics.

[Wednesday, 2.00-3.30 P. M., B₁ O.]

For other courses dealing with the History of Philosophy, see courses 21, 26 f, 30 and 45-48.

PHILOSOPHICAL CRITICISM

Professor LADD :—

45 *Critical Readings.*

In general, some one or more of the great *masterpieces* of philosophical literature will be read and criticized. For more particular reference see courses 18 and 46.

46 *Kant Seminary.* 2 hrs.

A study of the Principles of Conduct and of Art upon the basis of Kant's *Ethical and Aesthetical Writings*, *The Critique of Practical Reason*, *Metaphysics of Ethics*, etc., and the *Critique of Judgment*. Each exercise will, in general, consist of an expository and critical lecture to be followed by papers and discussions by the class. The effort will constantly be made not only to point out the relations in which this philosopher stands to the writings of to day upon the same themes, but also to appreciate the value of these later writings themselves. [See Course 47.]

[Tuesday, 4.00-5.45 P. M., 4 H. H.]

• Professor DUNCAN :—

[47 *The Philosophy of Herbert Spencer.* 2 hrs.

This course is a study of the Evolution Theory of Spencer in its psychological, ethical and metaphysical aspects. Spencer's *First Principles*, *Principles of Psychology* (selections), and *Data of Ethics* are read and discussed.

Omitted in 1904-1905.]

Dr. MONTGOMERY :—

48 *Philosophical German.* 2 hrs.

The class will translate Kant's *Kritik der Urtheilskraft* with special reference to the relation of the Kantian doctrine of the beautiful and of his teleology to subsequent theories. [See Course 46.]

[Thursday, 2.00 P. M., A, O.]

Dr. HESS :—

49 *The Philosophy of Lotze.* 2 hrs.

An exposition and criticism of the philosophy of Lotze as contained in his *Microcosmus*, which deals with such philosophical problems as the relation of philosophy, science and religion ; the different views of nature, especially the mechanical and teleological explanations ; the conception of "law" in nature, and evolution ; the existence and the immortality of the soul ; man as a moral and as a religious being ; the existence and nature of God, and the relation of God to the world ; the problem of evil ; etc.

[Wednesday and Friday, 8.30 A. M.]

*50 *Popular Discussions in Philosophy.* 2 hrs.

This is a course in philosophical criticism, and is intended to develop and train the critical spirit ; to deepen interest in the more profound themes of philosophy by showing their connection with popular life and thought ; and to vindicate sound psychology and a theistic philosophy. To this end some of the popular philosophical papers of Huxley, Tyndall, Clifford, Spencer and others are read and freely discussed.

[Tuesday and Thursday, 10.30 A. M.]

II. THE SOCIAL SCIENCES, HISTORY, AND LAW

ARTHUR M. WHEELER, LL.D.	D. CADY EATON, M.A.
SIMEON E. BALDWIN, LL.D.	CHARLES H. SMITH, LL.D.
WILLIAM G. SUMNER, LL.D.	THEODORE S. WOOLSEY, LL.D.
GEORGE B. ADAMS, Ph.D., Litt.D.	HENRY W. FARNAM, R.P.D.
WILLISTON WALKER, Ph.D., D.D.	EDWARD G. BOURNE, Ph.D.
JOHN C. SCHWAB, Ph.D.	GUY S. CALLENDER, Ph.D.
IRVING FISHER, Ph.D.	HENRY C. EMERY, Ph.D.
FREDERICK WELLS WILLIAMS, B.A.	OLIVER H. RICHARDSON, Ph.D.
ALBERT G. KELLER, Ph.D.	CLIVE DAY, Ph.D.
WILLIAM B. BAILEY, Ph.D.	ROGER FOSTER, LL.B., M.A.
JOHN P. NORTON, Ph.D.	HENRY B. LEARNED, M.A.
PHILIP P. WELLS, Ph.D.	GEORGE GRANT MACCURDY, M.A.
CHALFANT ROBINSON, Ph.D.	ERNEST H. BALDWIN, Ph.D.

A BIBLIOGRAPHY OF ECONOMIC AND KINDRED SUBJECTS is maintained by the instructors in Economics, and is available to students in the University Library. The department of Economics also collects statistical charts, tables and slides, which are preserved in E, Osborn Hall.

The BOOCOCK LIBRARY (founded in 1896 by Mr. and Mrs. S. W. Boocock) is a department library in the Social Sciences, which supplies students with the most rare and special works in those subjects which the University Library does not contain. Any books needed by special students will be obtained. Students of all degrees of advancement will find reference books in the Boocock Library, and are invited to apply for access to it to Prof. Sumner.

The ANTHROPOLOGY CLUB meets fortnightly for papers and discussions in Anthropology (Historical and Somatic), Ethnology, Sociology, and Demography.

The POLITICAL SCIENCE CLUB, comprising the graduate students and instructors in the social sciences, has its headquarters at 11 White Hall, which are open to members at all times. The department library there installed contains a collection of economic works generally required

by advanced students. Fortnightly meetings are held during the academic year. Announcement of the subjects discussed is made in the University Bulletin.

Opportunities are given students to visit such charitable and penal institutions and agencies of social betterment as are in New Haven, or within easy access of it.

The HISTORICAL SEMINARY ROOM, No. 90 High street, contains a reference library to which graduate students may have access at all hours.

The HISTORICAL CLUB meets fortnightly for the reading and discussion of papers and for reports on current periodicals.

Professor SUMNER :—

*1 *The Science of Society.* 2 hrs.

A course with text-book and lectures in Systematic Societology (Sociology).

[Monday and Friday, 8.30 A. M.]

2 *Anthropology.* 2 hrs.

A careful study of Ranke's *Der Mensch* (2d ed.), with an examination of the separate topics by means of all the appropriate material.

[Monday, 10.30 ; Wednesday, 9.30 A.M.]

3 *The Self-Perpetuation of Society.* 2 hrs.

(Section II of Systematic Societology.) An historical and ethnological study of the evolution of the *Marriage Institution* ; *mores*, taboo, idealization. The *Family* ; its forms, parenthood, kinship, status of woman. Comparative legislation on domestic relations. *Population*. The history, law and policy of population.

[Thursday and Friday, 10.30 A. M.]

[4 *The Mental Reactions.* 2 hrs.

(Section IVa of Systematic Societology.) An ethnological study of the development of the *Mental Processes* and of the growth and contents of the *Mental Outfit* of the human race in the earlier stages. Ghost-fear, daimonism, otherworldliness, knowledge and pseudo-knowledge, the aleatory element, world-philosophy, *mores*, codes, taboo, therapeutics, etc.

Omitted in 1904-1905.]

- [5 *The Beginnings of the Industrial Organization.* 2 hrs.

An ethnological study of the industrial organization from its earliest beginnings. Division of labor between the sexes and the special functions of each ; regulation of industry ; slavery ; formation of capital ; discoveries and inventions ; domestication of animals and plants ; money, etc.

Omitted in 1904-1905.]

Professor FARNAM :—

- [6 *The Principles of Public Finance.* 2 hrs.

A systematic treatment of the subject of government expenditure, government income, and government debt, illustrated by references to the financial statistics and experience of modern states.

Omitted in 1904-1905.]

- 7 *Social Politics.* 2 hrs.

A critical examination of the results of legislation designed to strengthen the economic position of the weaker social classes.

[Tuesday and Thursday, 8.30 A. M.]

- 8 *Pauperism and Crime.* 1 hr.

A study in social pathology, in which the causes of, and the leading methods of dealing with pauperism and crime are treated historically and critically.

[Wednesday, 8.30 A. M.]

- [9 *The Modern Labor Movement.* 2 hrs.

An historical study of the efforts made by wage workers to improve their condition, together with a critical examination of the economic theories which have been developed in support of the movement. The lectures will deal mainly with the 19th century, and will include the growth of Socialism, Labor Organizations, Labor Representation, and Labor Legislation. The study of the literature of the subject at first hand will also be undertaken by the students.

Omitted in 1904-1905.]

Professor SCHWAB :—

- *10 *The Financial and Industrial History of the United States.* 2 hrs.

Lectures upon the financial history of the United States, especially upon the history of American currency, banking institutions and practices, and the government revenue system; the origin and growth of American industries; the modern organization of industries; and the problem of corporate management of industries.

Collateral reading in Dewey, *Financial History of the U. S.*; *The Report of the Monetary Commission* (1898); Wells, *Recent Economic Changes*; Jenks, *Trust Problem*.

[Monday and Tuesday, 11.30 A. M.]

- *11 *Railroads.* 1 hr. second term.

Lectures upon the financial and industrial problems of the modern system of transportation; railroad consolidation and taxation; the Interstate Commerce Commission and its relation to pooling and discrimination.

[Tuesday, 9.30 A. M.]

- 12 *Finance.* 2 hrs.

Lectures and individual research.

Topics: The mechanism and problems of the modern financial world; the money and exchange market; investment securities; the finances of the industrial combinations.

Collateral reading in Greene, *Corporation Finance*; Sumner, *Investment Securities* (1901); Cleveland, *Funds*; Meade, *Trust Finance*; *Financial Review* (1905).

[Wednesday and Saturday, 10.30 A. M.]

- 13 *Economic Bibliography.* 2 hrs. first term.

Lectures upon methods of economic investigation; bibliographical review of economic literature, especially government and other serial publications; introductory to the next course.

[Tuesday and Thursday, 3.00 P. M.]

- 14 *Economic Research.* 1 hr. second term.

Lectures supplementary to those of the previous course. Practice in the preparation of topical bibliographies. A review of the leading classes of investigation, their methods, literature, etc. Illustrations especially from among the problems of modern industrial organization.

[Thursday, 3.00 P. M.]

Professor IRVING FISHER :—

15 *Theory of Prices, Price Levels, Rent and Wages.* 2 hrs.

The object of this course is to show what causes determine rates of exchange of all kinds. It will treat (1) of value in relation to cost and utility, (2) of price levels and their relation to the circulating medium, (3) of rates of exchange involving the time element, such as rent of land and houses, and especially wages of labor.

A knowledge of the calculus is desirable, though not indispensable.

[Tuesday and Thursday, 9.30 A. M.]

Professor CALLENDER :—

16 *Economic History of the United States.* 2 hrs.

The lectures in the course are designed to give a general account of the economic evolution of this country from its beginning as a simple agricultural and trading community forming a part of the larger economic unit of the British Empire, up to the highly organized industrial society of the present day. The origin and development of the different features of our economic organization will be treated ; the more important economic and social problems with which the American people have had to deal will be discussed ; and the part which economic influences have played in moulding American society and especially in determining the course of American politics will be shown. Collateral reading will supplement the lectures and each student will make a thorough investigation of at least one subject during the year under the direction of the instructor.

[Tuesday and Thursday, 3.00 P. M.]

Professor EMERY :—

*17 *Elementary Economics.* 1 or 3 hrs.

Lectures, one hour a week. Two hours a week will be occupied by quiz-exercises in small sections.

Primarily intended for undergraduate students.

[Lecture Wednesday, 11.30 A. M.]

18 *Commerce and Commercial Policy in the Nineteenth Century.* 2 hrs.

A study of the growth of international trade and the changes in commercial policy in the last one hundred years, especially

in the leading countries of Europe. A reading knowledge of French and German is important for the work of this course.

[Tuesday and Thursday, 12.30 P. M.]

19a *History of Economics.* Pt. I. 2 hrs.

The history of economic ideas, with special reference to economic policy, from the Middle Ages to the middle of the nineteenth century. Lectures and readings in contemporary authors, with class-room discussion.

[Monday and Friday, 12.30 P. M.]

[19b *History of Economics.* Pt. II. 2 hrs.

This is a continuation of the above course, uses the same methods, and is given in alternate years. It deals with the later reactions from the Classical School, protectionism, socialism and the historical school.

Omitted in 1904-1905.]

Assistant Professor DAY :—

20 *Economics and Politics, Modern Europe.* 2 hrs.

A study of the economic organization of the different states of Europe, in its relation to domestic and foreign politics; introductory to questions of the day. Lectures and assigned reading.

[Monday and Friday, 9.30 A. M.]

21 *Economics and Politics, Historical.* 2 hrs.

Development of the economic organization in Europe in its relation to the political organization; for students of economics and of history. Lectures, and assigned work in secondary and original sources of information.

[Tuesday and Thursday, 9.30 A. M.]

Assistant Professor BAILEY :—

*22 *Elementary Statistics.* 2 hrs.

The sources and reliability of statistical data are discussed, and the methods of distinguishing true and false inferences are pointed out. Index numbers are studied, and the lectures treat of the statistics of population, crime, suicide, property, etc. The attempt is made to determine some of the laws which govern the group-actions of men.

Text-book : Mayo-Smith, *Science of Statistics.*

[Division I, Tuesday and Thursday, 11.30 A. M.]

[Division II, Tuesday and Thursday, 12.30 P. M.]

*23 *American Social Conditions.* 2 hrs.

A critical study of the principal phenomena which are characteristic of American society. The problems connected with the negro, concentration of urban population with the attendant dangers, immigration, crime, poor relief, labor organizations, liquor question, etc., will be presented in lectures.

Text-book : Wright, *Elements of Practical Sociology*.

[Wednesday and Saturday, 10.30 A. M.]

24 *Labor Problems.* 1 hr.

The various theories concerning the payment of labor, the conflicts between capital and labor, strikes, lock-outs, coöperation, profit-sharing, arbitration, compulsory insurance, the effects of the increasing employment of women, and the various plans for the amelioration of the condition of the workingmen. Each member of the class will carry on a special investigation of an assigned topic.

[Friday, 10.30 A. M.]

*25 *Railroads.* 1 hr. first term.

Lectures upon the technical problems of railroad construction and equipment.

[Tuesday, 9.30 A. M.]

Assistant Professor KELLER :—

*26 *The Science of Society.* 2 hrs.

This course is introductory to the course in the Systematic Science of Society offered by Professor Sumner. In connection with text-books, upon which there will be daily tests, lectures will be given, designed to supplement and elucidate the text, and to afford the student a general knowledge of the doctrine of evolution, with its application to man and human society.

Topics to be covered in the text-book : the antiquity of man ; the relation of man to other animals ; racial differences ; language ; the arts of life ; the spirit-world, etc. ; this to be followed by a special study of several selected races and societies.

[Tuesday and Thursday, 8.30 A. M.]

27 *Colonization (Economic and Social).* 2 hrs.

Colonization as a sociological and ethnological process. A preliminary sketch of ancient and medieval colonization, fol-

lowed by a closer study of the experience of the several colonizing states of modern times. Emigration, colonial trade, frontier society, the native question, etc.

Students are required to undertake special investigation involving the use of some foreign language.

[Tuesday and Thursday, 10.30 A. M.]

[28 *Ethnology.* 2 hrs.

A study of existing nations and tribes ; their manners, customs, etc.; analysis and comparison of national traits. The course will deal chiefly with the life of savage and partially civilized peoples, and will be based primarily upon comprehensive reading in ethnography. The text-book work will be supplemented with lectures, papers and the use of all the illustrative material that may be available.

Omitted in 1904-1905.]

29 *Culture-History.* 2 hrs.

A course primarily for graduate students, which will consist mainly in the critical reading of Lippert's *Kulturgeschichte* (2 vols., Stuttgart, 1887), for the double purpose of acquiring an intimate knowledge of its subject-matter, and of comparing it with other works as a scientific construction. Informal instruction will be given concerning mechanical aids to research, bibliography, etc. Graduates must be prepared to begin the use of both German and French as tools of investigation.

[Hours to be arranged.]

Dr. NORTON :—

*30 *Trade Statistics.* 2 hrs.

The condition of trade viewed from the standpoint of (1) the international movement, (2) bank clearings, (3) the money supply, (4) the outlook for the harvests, and (5) earnings of corporations. Crop forecasts, visible supplies, etc.

[Monday and Friday, 5.00 P. M.]

31 *Interpolation.* 1 hr.

Methods of fitting curves to series of statistics in analysis of relations among variables ; also the theory of correlation of two or more variables. Practice in handling statistical data.

[Monday, 5.00 P. M.]

32 *Statistical Theory of the Evolution of Man.* 2 hrs.

Statistical methods for handling the data of the somatic evolution of man. Special reference will be made to the problems under variation, heredity, panmixia, regression, selection and prepotency, with passing notice of some practical applications in life insurance. The methods of Pearson, Yule and Galton will be discussed.

[Monday, 5.00 P. M., Friday, 4.00 P. M.]

33 *Corporation Economics.* 1 hr.

The anatomy of a corporation ; its incorporation, organization, advantages and disadvantages treated from the economic standpoint ; the "commutation" theory of interest and the statistical basis for capitalization of net earnings.

Individual research upon subjects allotted by the instructor for investigation.

Text-book : Dill, *On Corporations and Company Precedents.*

[Monday, 4.00 P. M.]

*34 *Railroads.* 1 hr.

Practice in the analysis of railroad reports and statistics.

[Saturday, 9.30 A. M.]

Mr. MACCURDY :—

35 *Physical Anthropology.* 2 hrs. 1st half-year.

Lectures and demonstrations. A study of man's position in the zoölogical scale and his structure from the racial standpoint, including characters of race, age, and sex, individual variations, and pathological conditions. In the laboratory, students will have access to suitable collections as well as practice in the use of apparatus.

[Hours to be arranged.]

36 *Prehistoric Anthropology.* 2 hrs. 2d half-year.

Man's place in the geological scale. Physical characters of the earliest known races, their environment and stages of culture. Paleolithic, Neolithic, and Bronze Ages, Hallstatt period and on to historic times. Illustrated by original specimens from the Museum collections and by casts, photographs, etc.

[Hours to be arranged.]

***37 Insurance. 2 hrs.**

Instruction in the general nature and economic functions of insurance, especially life, fire and marine insurance. Occasional lectures will be given by heads of insurance companies and others practically acquainted with insurance.

Topics covered : the history and statistics of the development of insurance ; the theory of chances and its application to the calculation of insurance premiums ; varieties of policies ; the economic influence and importance of insurance.

Text-books : The lectures delivered in this course during 1903-4, to be published before the fall term ; T. E. Young, *Insurance*.

This course is intended for those who wish a general knowledge of insurance, including any who are planning to enter the field professionally. Course *22 on Elementary Statistics can be taken advantageously as an introduction to this course.

[Monday and Friday, 5.00 P. M.]

Professor S. E. BALDWIN and Mr. ROGER FOSTER :—

39 Constitutional Law. 2 hrs.

Lectures on the basis of Cooley's *Principles of Constitutional Law* and the *Yale Cases on Constitutional Law*.

[Monday and Saturday, 9.30 A. M.]

Professor WOOLSEY :—

40 International Law. 2 hrs.

Lectures with monthly written tests. An exposition of the rules which govern the relations of states in peace and in war. Designed to be useful in understanding international politics ; for training in intelligent citizenship ; also as a basis for certain branches of legal practice. To be followed after the middle of the year by a discussion of various topics in the Diplomacy of the United States, illustrating the above.

[Tuesday and Wednesday, 10.30, in A Hendrie Hall.]

Dr. C. ROBINSON :—

41 Reciprocity Treaties. 1 hr. 1st term.

A lecture course that will cover all the reciprocity treaties which the United States has entered into up to the present time. These treaties will be considered both as a part of the diplomatic history of the country, and as practical examples of the working of the principle of reciprocity in national economy.

HISTORY

Professors ADAMS and BOURNE :—

- 42 *Methods of Historical Research and Criticism.* 1 hr.

The first half of this course consists of a discussion of the principles of historical criticism, for which Langlois and Seignobos' *Introduction to the Study of History* will serve as an outline. Several typical problems of internal and external criticism will be examined by the class and thoroughly analyzed. The second half, conducted by Professor Adams, consists of practical exercises in the study of selected historical documents, so arranged as to furnish examples of all the important points of method. The weekly exercises in this course may occupy two hours.

[Monday, 3.00 P. M.]

For a course in Latin Palaeography see Latin, course 49.

Assistant Professor F. W. WILLIAMS :—

- *43 *Ancient Oriental Nations from the earliest times.* 2 hrs.

A comprehensive survey of the beginnings of civilization, and its development among the principal nations of antiquity, including Babylonia, Assyria, Egypt, Phoenicia, and Media. This course illustrates the connection of Biblical and profane history, discusses the origins of political and social institutions, religions, the arts and sciences, and the Asiatic sources of European civilization, and constitutes an introduction to the study of history.

[Monday and Wednesday, 12.30 P. M.]

Professor PERRIN :—

- [44 *History of Greece to the Roman Conquest.* 2 hrs.

A detailed and systematic study of the political, intellectual, and artistic history of the ancient Hellenes, with suitable illustrations from their literature and monuments. Bury's *History of Greece* will be used as a basis for instruction, and collateral reading will be required in the best modern authorities.

Omitted in 1904-1905.]

Professor WALKER :—

45 *General Church History. (1st Course.)* 3 hrs.

The aim of this course for the year 1904-5 is to present an outline of Church history from the beginnings of Christianity to the end of the great Papal schism. Special attention is paid to the spread of Christianity, the conversion of the Roman Empire, Monasticism, the effects of the Germanic invasions, and the efforts of the Church for the Christianization of northern and eastern Europe, the rise of the Papacy, its conflict with the Empire; the Crusades; the Schoolmen and their influence; the medieval universities; and the new, religious forces of the thirteenth and fourteenth centuries.

[Wednesday, Thursday and Saturday, 9.30 A. M.]

46 *Christian Literature from Clement of Rome to Eusebius.*

1 hr.

In this course the attempt is made to familiarize the student with characteristic examples of the writings of the chief authors of the post-Apostolic period, and especially to gain a clear conception of Christianity as it was understood by them.

[Thursday, 10.30 A. M.]

Professor ADAMS :—

[*47 *Medieval History (first half).* 2 hrs.

From the beginning of the fourth to the tenth century. The subjects most fully discussed will be the fall of Rome; the spread of Christianity; the foundation and organization of the new German states; the beginning and growth of the papal power; the formation of the Frankish state; the rise and conquests of Mohammedanism; the empire and reforms of Charlemagne; and the separation of his empire into the modern states.

The development of civilization will be kept constantly in view throughout, and such institutions of both church and state as exerted an influence upon later times will receive especial attention.

Omitted in 1904-1905.]

*48 *Medieval History (second half).* 2 hrs.

From the beginning of the tenth to the middle of the fifteenth century.

The earliest organization of the modern states; feudalism and feudal society, considered institutionally and economically; the Holy Roman Empire and the monarchical papacy; the crusades

and their results ; the growth of commerce and the rise of the third estate to political influence ; the intellectual renaissance of the thirteenth century, with the beginning of universities and the revival of Roman Law ; the rise of England and France with contrasted constitutions, the conflict between them and the decline of Germany ; and the beginning of modern diplomacy.

[Tuesday and Thursday, 9.30 A. M.]

Professors ADAMS and WALKER :—

49 *Medieval Institutions.*

A two or three years' course. Not a lecture course. The seminary method will be employed throughout and large use will be made of the original material. A rapid reading knowledge of Latin, German and French is required. The object of the course is to make the student acquainted with the literature of the field, with the problems that are still unsolved, and with the sources which have been and must be used in their solution. In exceptional cases only will students be encouraged to take this course in their first year of graduate work.

[a] Professor ADAMS.

2 hrs.

The first year's course considers later Roman and early German institutions, and their combination in the Frankish state ; the development of the papal power and its special institutions ; the institutions of Charlemagne's empire ; the origin of feudalism ; and the beginnings of national governments.

Omitted in 1904-1905.]

b 1 Professor WALKER.

1 hr.

Second year's course covering the French institutions of the Feudal period in general and with special reference to their development from Louis VI to Louis IX. The aim will be to trace the relations and powers of the various classes of the French people, the nobility, clergy, rural and city populations, and to consider the growth of the authority of the French monarchy during one of the most significant periods in its development ; to discuss the methods by which the freedom of the lower classes was increased and the influence of the crown extended ; and to examine the constitution and activities of the more important organs of government.

62 Professor ADAMS. 2 hrs.

Second year's course with special reference to Norman and Angevin institutions in England. The course will open with a somewhat detailed study of feudal institutions of the tenth and eleventh centuries, and will then follow the institutional development in England from the Norman conquest to the establishment of parliament.

Assistant Professor F. W. WILLIAMS :—

*50 *Medieval Asia and the Mohammedan Conquest.* 2 hrs.

An outline history of Western Asia from the death of Alexander to the conquest of Constantinople, supplementary to the history of the Roman Empire and Medieval Europe. The course combines the study of text-books and recitations on Parthia, the Saracens and Ottoman Turks, with lectures and research work on special topics connected with the period. It shows the nature of Hellenistic influences in the East, their gradual effacement under Parthian and Persian rule, and their disappearance after the Arab conquest; it treats of the development of Christianity as an institution, of its political rôle and its struggles with Paganism and Islam, and of the antagonisms between Oriental and European civilization.

[Tuesday and Thursday, 11.30 A. M., C. O.]

Professor WALKER :—

51 *General Church History.* (2d Course.) 2 hrs.

This course is in continuation of course 45, but may be taken independently of it. Pursuing the same general method, its attempt is to trace the movements preparatory to the Reformation; to discuss the influence of the Renaissance and the discoveries; to examine the reformatory attempts within the Church; to follow in outline the story of the revolt from papal obedience in Germany, Switzerland, Scandinavia, France, the Netherlands, England and Scotland, and the Roman "Counter-Reformation"; and to inquire into the religious, political and social consequences of that revolt to the Peace of Westphalia on the European Continent and to the Toleration Act in England; to consider Pietism and Moravianism; the Wesleyan revival in its religious and philanthropic aspects; the beginnings of modern Protestant missions; Rationalism; the rise and development of modern German theology; the several parties in the Church of England; the English Dissenters; Scottish divisions and reunions; and the doctrinal and political development of Roman Catholicism to the present time.

[Tuesday and Friday, 11.30 A. M.]

- 53 *Four Eminent Theologians, Augustine, Aquinas, Calvin, Edwards.* 1 hr. 2d term.

In this course a brief outline of the life of each of these great theologians is given ; but the chief endeavor is to acquaint the student with their theological and philosophic significance. Characteristic portions of the writings of each will be examined.

Assistant Professor RICHARDSON :—

- *54 *The Renaissance and the Reformation.* 1 hr.

In this course the Renaissance and Reformation will be treated primarily as intellectual movements and considered in their relations to the intellectual development of Europe ; political history will be noticed in so far only as is essential.

Students will be required to do much work in the library.

[Wednesday, 8.30 A. M.]

- *55 *Modern European History to 1789.* 2 hrs.

This course deals with the formation of the modern European state-system, the colonial expansion of the eighteenth century, and such other characteristic features of modern history as combined to produce the Europe of the French Revolution and are essential to the understanding of the history of the nineteenth century.

Among the topics treated are the rise and decline of Sweden, the rise of Prussia and Russia, and the beginnings of the Eastern Question ; the age of Louis XIV, its institutions and representative ideas ; the relations of colonial expansion to traditional French policy ; the rivalry of France and England on the Continent, in America and India ; and the political, economic and intellectual movements preparatory to the Revolutionary epoch.

Lectures and collateral reading.

[Monday and Friday, 12.30 P. M.]

- 56 *French Constitutional History.* 1 hr.

A lecture course dealing with the characteristic institutions of the *Ancien Régime*. Bibliographical work will be required from the student.

- [57 *Brandenburg-Prussia under the Great Elector.* 1 hr.

Especial attention will be given to economic and constitutional developments. Readings will be assigned in Bornhak's *Geschichte des Preussischen Verwaltungsrechts*. The main part of the work will consist in the criticism of select documents upon special subjects.

Omitted in 1904-1905.]

Professor WHEELER :—

58 *History of Treaties, 1763-1815.* 1 hr.
[Wednesday, 5.00 P. M.]

*59 *History of Europe since 1789.* 2 hrs.
Mainly political, introductory to European politics of our day.
[Tuesday and Thursday, 9.30 A. M.]

60 *Investigation of Special Topics in European History
from 1789 to 1815.* 1 hr.
A general knowledge of the period, and ability to read French
or German easily, are required.

Dr. FORD :—

61 *Seminary in Modern European History.* 1 hr.

The general topic for 1904-5 will be Prussia during the Revolutionary and Napoleonic era. The plan is to make a coöperative study of the conditions in Prussia preceding the collapse of the old order and the inauguration of the reforms of Stein, Hardenberg and Scharnhorst. The course will serve as an introduction to the critical and constructive use of sources in both French and German.

Professor ADAMS :—

*62 *English Constitutional History to the present time.* 2 hrs.

The purpose of this course will be to show how the Anglo-Saxon system of self-government arose, and how the chief features of the present English Constitution took form. Especial attention will also be given to the rise of judicial institutions, the organization of the courts, the introduction of the jury, the beginning and growth of the Common law, etc. The more important Constitutional documents will be discussed in detail. While the course is of especial value to those who intend to study law, the interests of the general student will be kept in view.

At the close of the course some time will be given to a study of the present English constitution as practically operated.

During the year 1904-1905 political conditions of especial influence on constitutional growth will receive attention.

[Wednesday and Friday, 9.30 A. M.]

- [63 *English History from the accession of the Tudors to the reign of William and Mary.* 2 hrs.

A research course which extends through two years and lays more stress upon the constitutional than upon the political side of the subject. Construction of bibliographies, and reports based upon independent investigation of the sources, form an important part of the work.

a. The course for the first year embraces the period between 1485 and 1603. The reigns of Edward VI and Mary are treated with comparative brevity in lectures, with assigned readings from primary and secondary sources, while particular attention is paid to the reign of Henry VII and to constitutional developments under Henry VIII and Elizabeth.

b. The course for the second year embraces the period between 1603 and 1688. The constitutional history of the Puritan Revolution will receive especial consideration. The work consists in large part of a systematic study of the documents contained in Prothero's *Statutes and Constitutional Documents*, and Gardiner's *Constitutional Documents of the Puritan Revolution*.

Omitted in 1904-1905.]

Professor WHEELER :—

- 64 *Constitutional and Political History of England since 1760.* 2 hrs.

Lectures and required reading.

Professor BOURNE :—

- *65 *American History [1492-1763].* 2 hrs.

This course will deal with the history of the American Colonies from the beginning of the discoveries until the beginning of the American Revolution. The nature and objects of colonies, the character and aims of the colonists, the political, economic, and social development of the colonial communities, will be the leading topics.

The course will include a survey of the French and Spanish colonial establishments in America. Lectures, required reading and the study of selected documents.

[Tuesday and Thursday, 9.30 A. M.]

- *66 *American History [1763-1860].* 2 hrs.

A general course in the political History of the United States from the beginning of the Revolution to the Civil War. The

causes and progress of the Revolution, the formation of the Union, the rise and growth of parties, the development of democracy, the influence of the westward expansion and of slavery on political life, and the origin and significance of the more important economic questions will be discussed. Lectures and required reading.

[Monday and Friday, 10.30 A. M.]

[67] *The American Revolution and the Formation of the Union.* 2 hrs.

After a brief survey of the English colonial system as it existed in the first half of the eighteenth century, the causes and progress of the Revolution will be taken up in detail. Considerable attention will be given to the political theories of the time, and to the influence of the Revolution in Europe.

In the second part of the course especial attention will be given to the political and economic forces making for a more compact union and to the contemporary political discussion.

Omitted in 1904-1905.]

68 *Diplomatic History of the United States.* 2 hrs.

History of the foreign relations of the United States from the end of the Revolution to the close of the Civil War. Special attention is given to the relations with Spanish America and to the annexations of territory.

[Tuesday and Thursday, 3.00 P. M.]

Professor SMITH :—

69 *American History (Constitutional).* 1 hr.

(a) A study of the Federal Constitution from the historical point of view, tracing the origin, purpose, and working of its principal provisions. Lectures and collateral reading, with an examination at the close of the course.

(b) An extended course of reading in speeches and writings of statesmen and jurists, and decisions of the Supreme Court, whereby the constitution has been expounded and developed ; with inquiry into important phases of public opinion on the constitution. For individual study, with occasional reports and examinations, and an elaborate paper at the close of the course.

(This course may be made to count as one hour, or two hours, according to amount and character of work done.)

[Saturday, 10.30 A. M., D. O.]

- 70 *United States since 1860.* 2 hrs.

The first half of the year will be given to a study of the Civil War. The second half to a study of Reconstruction, and some other important features of our history down to the present time. Either half of the course may be taken without the other, and when so taken will be counted as one hour for the year. A research course, with weekly reports and discussions. (A few undergraduate Seniors may be admitted to this course.)

[Tuesday, 10.30 A. M.—12.20 P. M., D₂ O.]

Dr. E. H. BALDWIN :—

- 71 *New England Colonial Society.* 1 hr.

A study of social conditions in New England as revealed by colonial legislation. Colonial records will serve as a basis for the work, but other contemporary material will be used. The course will consist of two parts, each covering one year ; either part may be taken independently of the other.

(a) The seventeenth century to 1689. In this period such topics as the immediate problems of settlement, measures for the protection of life, property and morals, modes of communication, and aids to material development, will be considered with special reference to their influences upon the life of the people.

(b) 1689 to the Revolution. In this period the activities connected with the French and Indian wars, the African slave trade, ship building, privateering, etc., will be considered with special reference to their influences upon the manners and morals of the people.

Mr. LEARNED :—

- 72 *The American Executive, 1780-1830.* 1 hr.

A course of investigation into the history of the Presidency, with some reference to the development of the Cabinet as an institution influencing public policy. It will include studies of the early conception of the office of President before the Convention of 1787, the beginnings of the Departments and of the Cabinet ; the primacy of the Secretaries of State ; Cabinet appointments and resignations ; attempts to invade the executive ; the phases of the purchase of Louisiana, and of the genesis of the Monroe Doctrine that illustrate the development of executive power.

Dr. P. P. WELLS:—

- 73 *The Southern States before 1860.* 1 hr.

A research course dealing primarily with social and economic conditions. The sources will be independently investigated and reports made upon such topics as agriculture and commerce, the movement of population, the slave trade, the material condition and legal status of the slave, free laborers, the slave-holding classes, etc.

Professor BOURNE:—

- *74 *History of Spanish America chiefly in the Nineteenth Century.* 1 hr.

In this course after a survey of the general condition of the Spanish colonies at the end of the eighteenth century, the causes and progress of the struggle for independence will be taken up. This will be followed by an outline of the political history of the principal states down to the present day.

Assistant Professor F. W. WILLIAMS:—

- *75 *Modern Asiatic History.* 2 hrs.

A course embracing successively the regions of India, Japan, China, and Central Asia, with particular regard to their history since the seventeenth century, their governments, and their relations with European powers. The culture, faiths, and sociology of existing nations in the Far East are here considered with a view of interesting those whose historical knowledge is confined to the Western world. The course is designed to stimulate further reading by students in special topics suggested by the instructor, upon which written essays will be presented and discussed. It also offers an opportunity for those who contemplate missionary careers to acquaint themselves with the political and social conditions of the more important foreign missionary fields.

. [Tuesday and Thursday, 12.30 P. M.]

- *76 *European Colonies in Asia and Africa.* 2 hrs.

The history of colonization as undertaken and systematized by European nations in modern times especially in regions already populated. In connection with the causes leading to the acquisition of colonies, the development of the colonial administration of each of the great powers is treated in turn. The course will involve the investigation of special subjects assigned by the instructor and the critical discussion of brief theses written upon them.

(For the sociological aspects of modern colonization see course 27, given by Dr. Keller.)

[Monday and Wednesday, 11.30 A. M.]

77 *Diplomatic Intercourse with Asiatic Nations.* 2 hrs.

A special study of the relations between the states of Eastern Asia, Europe and America chiefly during the nineteenth century.

Professor BOURNE :—

78 *Historiography in America.* 1 hr. 2d half-year.

A critical survey of historical writing and scholarship in America.

The principles of historical criticism applied, first, to narrative histories which are classed as sources and, second, to selected secondary authorities.

[79 *Modern European and English Historiography.*

1 hr. 2d half-year.

History of modern historical literature and investigation from the middle of the eighteenth century. After a brief review of the general condition of historical studies in the last century, the modern development of historical study in Germany, France, and England is examined and its progress followed in the representative works of historical scholarship down to our own time.

Omitted in 1904-1905.]

Professor D. CADY EATON :—

80 *History of Art.* 2 hrs. 2d term.

The History of France by its Monuments, from the time of Philip Augustus to the time of Louis XVI. History of the Hohenzollern Family as illustrated in the Fine Arts. Class instruction will consist of conferences, theses and examination on prescribed reading. Students are expected to be familiar with the political history of the periods to be discussed.

For France, Drury's smaller history is recommended; for Germany, David Müller's history.

Ability to read French and German is essential for satisfactory progress.

Lecture, Tuesday, 3.00 P. M.; recitation, Thursday, 3.00 P. M.

III. SEMITIC LANGUAGES AND BIBLICAL LITERATURE

EDWARD L. CURTIS, Ph.D., D.D. FRANK K. SANDERS, Ph.D., D.D.
BENJ. W. BACON, Litt.D., D.D. FRANK C. PORTER, Ph.D., D.D.
CHARLES F. KENT, Ph.D. CHARLES C. TORREY, Ph.D., D.D.
SIDNEY A. WESTON, Ph.D.

Connected with the department are the Seminary rooms, the Reference Libraries, the Special Collections and the Semitic and Biblical Club.

The SEMINARY ROOM in 9 Fayerweather Hall adjoins the two recitation rooms used by the department. It contains a good reference library in Biblical Literature, and can be used for purposes of study at all times.

A REFERENCE LIBRARY, available for students, situated very near to the special library of the department proper, is the Trowbridge Reference Library of the Divinity School. It contains more than 3,000 carefully selected volumes, and is particularly rich in works of reference for Biblical study.

The SALISBURY COLLECTION of Oriental manuscripts, books and works of reference, the library of the American Oriental Society, the collection of rare and valuable Arabic manuscripts, made by Count Landberg, acquired recently for Yale University through the munificence of Morris K. Jesup, Esq., of New York City, and the well-stocked Semitic sections of the general Library, furnish exceptional advantages and opportunities for independent research to the student of Semitic literature.

The SEMITIC AND BIBLICAL CLUB, composed of the instructors, the students who are studying for an advanced degree, and others who are interested in the work, holds stated semi-monthly meetings, at which papers on subjects of interest to Biblical students are presented and discussed.

The BIBLICAL RESEARCH CLUB meets for discussions of a semi-popular character on Biblical subjects.

HEBREW

Professor CURTIS :—

- *1 *Elementary Hebrew.* 4 hrs.
 The year's work includes a mastery of the elements of Hebrew and the translation of Genesis, with the reading of Joshua and Judges at sight.
- [2 *The Book of Job.* 1 hr.
 The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.
 Omitted in 1904-1905.]
- 3 *Selections from Proverbs, and the Five Megilloth.* 1 hr.
 The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.
- 4 *Selections from the Psalter.* 2 hrs. 1st term.
 The grammatical and historical exegesis of the text, with attention to New Testament interpretation and homiletical application.
- 5 *The Book of Isaiah.* 2 hrs. 2d term.
 The grammatical and historical exegesis of the Hebrew text.

Professor KENT :—

- 6 *Hebrew Seminary.* 2 hrs.
 A knowledge of Hebrew, Hellenistic Greek, and German is required. In 1904-1905 the more important syntactical and textual problems presented by the Old Testament prophetic books will be considered.

Dr. WESTON :—

- *7 *Elementary Hebrew.* 2 hrs.
 A study of the elements of the Hebrew language in connection with the reading of Genesis i-viii and of selected passages of easy Hebrew.
- *8 *Advanced Hebrew.* 2 hrs.
 Reading of the Books of Samuel and a thorough review of the elements of Hebrew grammar and syntax, followed by practice in rapid sight reading.

COGNATE SEMITIC LANGUAGES

Professor TORREY :—

- 9 *Elementary Arabic.* 2 hrs.

The elements of Arabic grammar, including exercises in writing. Rapid reading of easy prose extracts. The text-books used will be Socin's *Grammar* (2d edit.) and Brünnow's *Chrestomathy*.

- [10 *The Koran.* 2 hrs.

Reading of selected suras, with a supplementary study of the life of Mohammed.

Omitted in 1904-1905.]

- 11 *The Arabic Historians.* 2 hrs. 1st half-year.

The reading of Ibn Hishâm's account of the battle of Bedr.

- 12 *Arabic Poetry.* 2 hrs. 2d half-year.

The reading of selections from Nöldeke's *Delectus Veterum Carminum Arabicorum*.

- [13 *Elementary Syriac.* 2 hrs.

The text-book used is Brockelmann's *Syrische Grammatik*.

Those who intend to make a thorough study of the New Testament or of early Church history will find this course valuable.

Omitted in 1904-1905.]

- 14 *The Old Syriac Gospels.* 2 hrs. 1st half-year.

The reading of a considerable portion of The Lewis Palimpsest (*The Four Gospels in Syriac*; Cambridge, 1894), with attention to both linguistic and critical phenomena. Students who have taken course 13, or its equivalent, will be qualified to enter this course.

- 15 *Biblical and Palestinian Aramaic.* 2 hrs. 2d term.

Reading of the Aramaic portions of Daniel and Ezra, with especial attention to the language in which they are written. Marti's *Grammatik der Biblisch-Aramäischen Sprache* will be used as the text-book. If time permits, other specimens of early Palestinian Aramaic will be read, using Dalman's *Aramäische Dialektproben*, or Merx's *Chrestomathia Targumica*. Dalman's *Grammatik des Jüdisch-Palästinischen Aramäisch* will be referred to.

16 *Elementary Assyrian.* 2 hrs.

The aim of the course is to give the student a good introduction to the Assyrian language and literature. Especial attention will be given to practice in reading both cuneiform and transliterated texts. The text-books used will be Lyon's *Assyrian Manual*, 2d edition, and Delitzsch's *Lesestücke*, 4th edition, 1900.

[17 *Babylonian and Assyrian Historical Texts.* 2 hrs.

Texts will be read in the cuneiform or in transliteration, according to the needs of the class.

Omitted in 1904-1905.]

[18 *North Semitic Inscriptions.* 2 hrs. 1st half-year.

The Moabite stone ; the Siloam inscription ; the Zenzirli monuments, and other Old Aramaic remains ; selected Phoenician and Palmyrene inscriptions ; coins with Old Semitic legends. The aim of the course is to acquaint the student with some of the monuments which are especially important for the study of the Old Testament languages and history, and to provide a brief general introduction to North-Semitic epigraphy.

Omitted in 1904-1905.]

[19 *Elementary Ethiopic.* 2 hrs. 2d term.

The elements of Ethiopic, using Praetorius's *Äthiopische Grammatik* and Bachmann's *Lesestücke*.

Omitted in 1904-1905.]

20

Advanced courses in Classical and Palestinian Syriac, Old Babylonian, Ethiopic, and Sabaeen and Minaean Inscriptions, and elementary courses in Persian and Coptic, will be given according to the needs of students. Instruction in modern colloquial Arabic (Syrian dialect) will be offered to those who intend to spend a year or more in the American School in Palestine.

SEMITIC PHILOLOGY AND ARCHAEOLOGY

Professor TORREY :—

*21 *General Introduction to Semitic Philology.* 2 hrs. 1st term.

A general view of the Semitic languages and peoples, including a brief survey of their literatures. No previous knowledge of the Semitic languages is required for this course, though some acquaintance with at least the Hebrew language is desirable.

- 22 *Studies in Semitic Art and Archaeology.* 1 hr. 2d term.

Informal conferences, supplemented by private reading. The aim of the course is to acquaint the student with the most characteristic Old Semitic monuments, and their symbolism, and to give the basis for an estimate of the value and significance of the Semite's contribution to the art of the ancient world. The continuation of course 24.

- 23 *Comparative Semitic Grammar.* 1 hr.

This course is for advanced students, and is especially adapted to the needs of those who intend to teach Hebrew. A good knowledge of Arabic grammar is an important prerequisite. The student should provide himself with Zimmer's *Vergleichende Grammatik der semitischen Sprachen*. Reference will also be made to Wright's *Lectures on the Comparative Grammar of the Semitic Languages*.

Professor KENT :—

- 24 *The Discovery and Decipherment of the Ancient Semitic Inscriptions.* 1 hr. 1st term.

A review of the history of excavations in ancient Persia, Assyria, Babylonia, and Syria, with a study of the problems and methods of the modern excavator. A survey of the different forms and types of Semitic inscriptions and the history of their decipherment. Continued during the second term by course 22.

BIBLICAL LITERATURE

Professor CURTIS :—

- 25 *Ancient Traditions and History of the Jewish People.* 1 hr.

Studies in history and archaeology with the view of determining the meaning and historical value of the Biblical records.

- [26 *Analysis and Exposition of Isaiah, Jeremiah, and Ezekiel.*
(English Bible.) 2 hrs. 2d term.]

Omitted in 1904-1905.]

- 27 *Analysis and Exposition of the Twelve Minor Prophets.*
(English Bible.) 2 hrs. 2d term.

- 28 *Old Testament Introduction.* 1 hr.

A brief survey of the history of the canon, text, and versions, followed by special introduction to the Hexateuch and remaining Old Testament books. Lectures.

- 29 *Problems of Hexateuchal Criticism.* 1 hr. 2d term.

A consideration of the problems of Hexateuchal criticism.

Professor PORTER :—

- 30 *Theology of the Pre-exilic Prophets.* 2 hrs. 1st term.

A course of lectures on the religious and ethical conceptions of Amos, Hosea, Micah, Isaiah and Jeremiah, based on a critical use of the books that bear their names, and aiming to set forth their individuality and their significance in the history of religion.

- 31 *Theology of Judaism.* 2 hrs. 2d term.

Lectures on the religious history of the Jews from the Exile to the rise of Christianity. The prophets during and after the Exile, the establishment of the religion of the Law, the religious conceptions of the Psalms, the views and problems of the wisdom literature, of late history and story, and of the apocalypses, will be considered. The effort will then be made to trace in outline the history of some important doctrinal conceptions throughout the Old Testament.

- 32 *Biblical Theology of the New Testament.* 3 hrs.

The central aim of the course is the right understanding and estimation of the Teaching of Jesus. This is studied on the basis of a critical comparison of the Gospels, and with reference to Old Testament and contemporaneous Jewish thought. The Apostolic Teaching is then studied, the common faith of primitive Christianity, the distinctive character and influence of the thought of Paul, and the influences and movements of the early post-Apostolic age.

- 33 *Apocalyptic Literature.* 1 hr.

The reading of the principal Jewish and Christian Apocalypses, with a study of the rise of this literature and its significance, and the question of foreign influences in its development.

- 34 *Doctrine of Sacred Scripture.* 1 hr.

A historical study of the rise and significance of the Canonical Book in Judaism and Christianity, with some comparison of the place and value of sacred books in other religions.

Professor BACON :—

- *35 *The Pauline Epistles.* 3 hrs. 1st term.
Grammatico-historical exegesis of Galatians with a comparison of the Pauline system.
- *36 *The Christological Epistles.* 1 hr. 1st term.
A study of the origin and nature of the Christology of Paul in Ephesians with a comparison of Colossians, Philemon, and Philippians. Lecture course, the class preparing theses.
- *37 *Synoptic Gospels.* 3 hrs. 2d term.
Historico-critical exegesis of the gospel of Mark with a comparison of the synoptic tradition. Critiques prepared by the class.
- 38 *The Teaching of Jesus.* 1 hr. 2d term.
Historico-critical exegesis of the discourses of Jesus embodied in Matthew and Luke.
- *39 *New Testament Encyclopedia.* 1 hr. 2d term.
Lectures on the philological and historical apparatus for New Testament exegesis, textual criticism and history of the New Testament Canon.
- 40 *The Book of Acts.* 2 hrs. 2d term.
Critical reading of the Book of Acts with application of the principles of historical and documentary criticism. Seminar methods.
- 41 *The History of New Testament Literature.* 2 hrs. 1st term.
Special introduction to the several New Testament books. Text-book : Bacon's *Introduction to N. T. Literature*. Critiques of standard authorities prepared by the class.
- 42 *The Catholic Epistles.* 2 hrs.
Discussion of problems of criticism and exegesis. During the first term the first epistle of Peter will be read; during the second term the epistles of James, Jude, and second Peter. Alternates with 43.

- 43 *The Johannine Literature.* 2 hrs.

A critical study of the origins of the Fourth Gospel and the Johannine epistles. Research into the type of thought represented, the sources and character of the evangelic tradition followed and the types of doctrine antagonized. *Seminar method.* Alternates with 42.

- 44 *Problems of Textual Criticism.* 1 hr. 2d term.

A critical comparison of the Alexandrian with the Western form of the text, aiming to exhibit the history of the principal variants. *Seminar method*, with use of Von Soden's *Die Schriften des Neuen Testaments*, 1902-1903.

Professor SANDERS :—

- [45 *Jewish and Christian Laws and Institutions.*

2 hrs. 2d half-year.

A course continuing course 50. A corresponding study of the laws and institutions of later Judaism and Christianity, and of their historic relationship to each other and to the systems which antedated and influenced them.

Omitted in 1904-1905.]

- *46 *Hebrew Wisdom Literature.* 2 hrs. 2d half-year.

An investigation (on the basis of the English translation) of the forms of Hebrew reflective literature and a comparison with the similar literature of other nations. The course will include an interpretation both of the biblical books of Proverbs, Ecclesiastes, and Job, and of the apocryphal books of Ecclesiasticus and the Wisdom of Solomon, and a consideration, both of the wisdom writers as a class and of the importance of this literature in the history of religious thought.

- [47 *The English Bible.* 2 hrs. 2d half-year.

The history of the gradual growth of the English Bible from its earliest beginnings to the American Revision of 1900. This will include a discussion of the history of the collection and arrangement of the Biblical books and of the various versions which influenced the English version. Upon these results will be based an investigation of the best methods of interpreting and teaching each department of Biblical Literature.

Omitted in 1904-1905.]

- 48 *The Gospels.* 1 hr.

A study of the Gospels with especial reference to their origin and interpretation, and to the classification and consideration of the teachings of Jesus.

Professor KENT :—

- *49 *Biblical Literature and History.* 3 hrs.

A general course intended for students who wish to gain a definite, systematic knowledge of the literature of the Bible on the basis of the best English translations, and to become acquainted with the significant political, social, and religious facts and institutions which constitute its historical background.

Text-books, supplemented by lectures and syllabi, with detailed references to the standard literature on each subject.

- [50 *Israelitish Laws and Institutions.* 2 hrs. 1st half-year.

A systematic codification and interpretation of the laws found in the Old Testament. With this classification as a basis, the origin, development, and significance of the social, political, and religious institutions of the Israelites are studied and compared with those of other ancient Semitic peoples.

Omitted in 1904-1905.]

- 51 *Hebrew Poetic Literature.* 2 hrs. 1st half-year.

Investigation (on the basis of the English translation) of the characteristics of Hebrew poetry, classification of the different types found in the Bible, comparison with other examples of Semitic poetry, and a careful study of the relation of literary form to interpretation. Special attention will be given to the origin, structure, and interpretation of the Psalter.

- 52 *Biblical Seminary.* 2 hrs.

A course intended to train students for patient, accurate, and independent investigation of Biblical and cognate questions. It is open only to those who have a general acquaintance with the field of Biblical history and literature.

During 1904-1905 the origin, date, analysis, and teaching of the Old Testament prophetic and apocalyptic writings will be critically studied. Especial attention will be given also to the historical development of Israel's Messianic hope and its realization in Christianity.

*53 *Historical Origin of Christianity.*

1 hr.

A course of lectures, supplemented by discussions and papers, on the growth of Judaism, the conditions in the Graeco-Roman world at the beginning of the Christian era, the nature of the historical sources regarding the beginning of Christianity, the life, methods, and work of its Founder, and the factors which contributed to its development and extension.

IV. CLASSICAL AND INDO-IRANIAN PHILOLOGY

TRACY PECK, LL.D.	HENRY P. WRIGHT, Ph.D., LL.D.
BERNADOTTE PERRIN, Ph.D., LL.D.	THOMAS D. SEYMOUR, LL.D.
EDWARD P. MORRIS, M.A.	HENRY R. LANG, Ph.D.
THOMAS D. GOODELL, Ph.D.	E. WASHBURN HOPKINS, Ph.D.
HORATIO M. REYNOLDS, M.A.	CHARLES C. TORREY, Ph.D.
HANNS OERTEL, Ph.D.	JAMES W. D. INGERSOLL, Ph.D.
CECIL K. BANCROFT, B.A.	CHARLES H. WELLER, B.A.
PAUL V. C. BAUR, Ph.D.	CHARLES U. CLARK, Ph.D.
SAMUEL E. BASSETT, B.A.	HENRY B. WRIGHT, Ph.D.

Students in this department have at all hours unrestricted use of the library of the department. This is in Phelps Hall, near the classical seminary rooms, in a large and well lighted apartment supplied with tables and private lockers. It contains more than three thousand volumes, and additions are made each year, so that the student finds here practically everything needed for ordinary work in the courses in classical philology, except some periodicals and expensive illustrated works, which are accessible in the University library.

Special purchases of books will be made for students who are carrying on an investigation, either in connection with their theses or otherwise.

The CLASSICAL CLUB, consisting of the instructors and students in the department, meets in the library room every Saturday evening, to hear reports and papers in the field of classical philology, or to read and discuss the work of some Greek or Latin author. During the year 1904-1905 the club will read from Aulus Gellius and von Wilamowitz-Moellendorff's *Griechisches Lesebuch*.

Graduate students of this University who are approved by the classical instructors are admitted without charge to the American Schools of Classical Studies at Athens and in Rome.

Attention is called to the following allied courses in other departments:

In Ancient Philosophy : Courses I, 39 (Ancient Philosophy) ; 41 (Plato's Dialogues) ; 42 (The Philosophical Writings of Cicero) ; 43 (Pre-Socratic Philosophy) ; 44 (Aristotle's Metaphysics).

In the History of Philology : II, 54 (The Renaissance and the Reformation).

In Old Testament Greek : III, 53.

1 *Classical Seminary.*

2 hrs.

The members are expected to read French and German freely and to have read widely in Greek and Roman literature.

Professor SEYMOUR :—

(a) *Pindar and Bacchylides.*

1st half-year.

Critical, exegetical, and historical studies in selected odes of Pindar and Bacchylides. Members of the Seminary should read the extant works of these poets before the beginning of the year.

[Wednesday, 4.00–6.00 P. M., 23 Phelps Hall.]

Professor OERTEL :—

(b) *A Study of Latin Suffixes.*

2d half-year.

Professor OERTEL :—

2 *Readings in Modern Philological Literature.*

Every member of the class will be expected to digest, and read an abstract of, one or two of the following books : E. Schwartz, *Fünf Vorträge über den griechischen Roman* (Berlin, 1896 ; 3 marks) ; E. Rohde, *Psyche* (2d ed., Freiburg, 1898 ; 20 marks) ; G. Voigt, *Die Wiederbelebung des classischen Alterthums* (3d ed., Berlin, 1893 ; 20 marks) ; H. Usener, *Götternamen* (Bonn, 1896 ; 9 marks) ; J. Ries, *Was ist Syntax ?* (Marburg, 1894 ; 3 marks) ; E. Norden, *Die antike Kunstprosa* (Leipzig, 1898 ; 28 marks) ; P. Cauer, *Die Kunst des Uebersetzens* (Berlin, 1903 ; 3.60 marks) ; the same, *Grammatica militans* (2d ed., Berlin, 1903 ; 3.60 marks) ; Wilamowitz-Moellendorff, *Aristoteles und Athen* (Berlin, 1893 ; 20 marks) ; P. Kretschmer, *Einleitung in die Geschichte der griechischen Sprache* (Göttingen, 1896 ; 10 marks) ; M. Hoernes, *Urgeschichte der bildenden Kunst in Europa* (Wien, 1898 ; 23.50 marks) ; J. E. Sandys, *A History of Classical Scholarship from*

the sixth century B. C. to the end of the Middle Ages (Cambridge, 1903; \$3.50, Macmillan); M. Bréal, *Semantics* (Engl. Transl.; London, 1900; \$2.50, Holt).

In addition to these, some older classics:

F. A. Wolf, *Darstellung der Alterthums-Wissenschaft*, reprinted in Bernhardt's edition of Wolf's *Kleine Schriften*, vol. II (Halle, 1869), p. 808-895; I. N. Madvig, *Artis criticae conjecturalis adumbratio*, in his *Adversaria Critica ad Scriptores Graecos* (Hauniae, 1871), p. 8-184; R. Bentley, *Dissertation upon the Epistles of Phalaris* (London, 1836, or Berlin, 1874).

Two copies of each of the books read will be reserved for the use of the class, the one in the College Library and the other in the Library of the Classical Club.

GREEK

Professor PERRIN:—

[3] *Thucydides.* 1 hr.

Practical exercises in the exhaustive critical study of portions of the text of Thucydides, following lectures on the MSS. and bibliography of this author. An introduction to the more advanced work of the Classical Seminary in textual criticism and interpretation. The critical edition of Thucydides by Hude (2 vols., Leipzig, Teubner, 1898, 1901) will be the chief text-book.

Omitted in 1904-1905.]

Professor SEYMOUR:—

4 *The Greek Orators.* 3 hrs.

A study of Greek Oratory, beginning with the orations of Isaeus, and including some of the private orations of Demosthenes, with reference to Athenian life and law, as well as to the development of Attic eloquence.

[Monday and Thursday, 8.00-9.30 A. M., 23 Phelps Hall.]

[5] *Epic Poetry.* 3 hrs.

Introduction to the critical study of Homer. Lectures on the history of Homeric study, Epic poetry, the composition and transmission of the poems, life in the Homeric times in its various aspects; Homeric language and verse. These are followed by a familiar but critical interpretation (and exercises in interpretation and criticism) of portions of the *Odyssey*, and of the later Greek epics.

Omitted in 1904-1905.]

- [6] *Plato.* 3 hrs.
The *Republic*, and portions of the other dialogues which are most important for its elucidation.
Omitted in 1904-1905.]
- [7] *Aeschylus.* 3 hrs.
Omitted in 1904-1905.]

Professor GOODELL :—

- 8 *Sophocles.* 3 hrs.
Reading of the seven extant plays with special attention to the artistic form, including style, treatment of the myths, management of the action, use of meters, and the like. Considerable practice is given in reading Greek verse aloud.
[Tuesday, Thursday, Saturday, 8.30 A. M., Phelps Hall.]
- [9] *Euripides.* 3 hrs.
Rapid reading of the nineteen plays.
Omitted in 1904-1905.]
- 10 *Greek Composition.* 2 hrs.
Exercises in translation and free composition, both previously prepared and extemporaneous.

Professor REYNOLDS :—

- 11 *Aristotle's Poetics. Literary Criticism in Ancient Times.* 1 hr.
Interpretation of the *Poetics* and parts of the *Rhetoric*, with selections from Plutarch, Pseudo-Longinus, and Lucian, with topical study of Aristotle's influence on literature and art.
- 12 *Late Greek Poetry.* 1 hr.
This course includes a survey of Alexandrian and later Greek poetry. Reading of the mimes of Herondas, with selections from the Anthology, and from the hymns of Callimachus, and other fugitive poetry.

Professor OERTEL :—

- 13 *Greek Dialects, and Comparative Grammar of Greek Sounds and Inflections.* 2 hrs.
Students should provide themselves with F. Solmsen's *Inscriptiones Graecae ad illustrandas dialectos selectae* (Teubner, 1903 :

price 2.40 marks) and either Hirt's *Handbuch der griechischen Laut- und Formenlehre* (Heidelberg, 1903; price 9 marks) or Brugmann's *Griechische Grammatik* (3d ed., München, 1900; price 14 marks, bound); this latter includes a syntax which Hirt lacks.

The course of eighteen lectures on Indo-European Phonology serves as an introduction to this course.

Mr. WELLER :—

14 *Xenophon.* 2 hrs.

An introduction to Xenophon. A brief survey of Xenophon's writings and the critical reading of parts of the *Anabasis*. Study of special topics such as the life of Xenophon, his style and diction, the route of "the ten thousand," Greek military equipment and tactics. Students should have the complete Teubner text of Xenophon's works, including Gemoll's *editio maior* of the *Anabasis*.

Mr. BASSETT :—

15 *Modern Greek.* 1 hr.

A practical introduction to the subject, using A. Thumb's *Handbuch der neugriechischen Volkssprache*. Particular attention is given to the colloquial language.

16 *Introduction to Greek Epigraphy.* 1 hr.

- a. The local alphabets, and the more important inscriptions written in them.
- b. Attic inscriptions, selected for their historical or antiquarian interest.

Professor PERRIN :—

[*17 *The Testimonies of Aristophanes, Thucydides, and Plutarch to the Career of Pericles* (after B 1). 2 hrs.

A study of literary forms (Old Athenian Comedy; History; Biography) and historical tradition.

The *Acharnians* of Aristophanes is read entire, as well as other testimonies of Old Athenian Comedy to the career and influence of Pericles; those portions of Thucydides also (especially the first and second books) which bear on the same subject; and finally the biography of Pericles by Plutarch. The estimates of Pericles by leading modern historians are also examined.

Omitted in 1904-1905.]

Professor SEYMOUR :—

- [*18 *Aeschylus and Pindar.* 2 hrs.

The *Persians* and the *Agamemnon* of Aeschylus are read with special attention to the dramatic structure of the two plays. In the latter part of the year the principal extant odes of Pindar are read, and a brief sketch of Greek lyric poetry is given.

Omitted in 1904-1905.]

- *19 *Plato and Aristotle.* 2 hrs.

The *Phaedo* of Plato and the *Nicomachean Ethics* of Aristotle.

[Monday and Friday, 5.00 P. M., 23 Phelps Hall.]

- [*20 *Greek Testament.* 2 hrs.

A philological study of St. Paul's Epistles to the Corinthians and Galatians, and the chief characteristics of the Hellenistic diction.

Omitted in 1904-1905.]

- *21 (a) *The Idylls of Theocritus.* 2 hrs. 2d half-year.

- (b) *Demosthenes on the Crown.* 2 hrs. 1st half-year.

[Tuesday and Thursday, 3.00 P. M., 23 Phelps Hall.]

Professor HOPKINS :—

- *22 *Herodotus.* 2 hrs.

Selections from Herodotus chosen with a view to a study of the style of the author.

Professor REYNOLDS :—

- [*23 *Homer.* 2 hrs.

Reading of the entire *Odyssey*. The course is intended for the general student of literature.

Omitted in 1904-1905.]

- *24 *Euripides.* 2 hrs.

A reading-course with reference to Euripides's poetic and dramatic quality. Five or six plays are read. Discussion of the poet's relation to his own times, style, metres, dramatic innovations, and influence on the Roman and modern dramatists, with occasional lectures.

- *25 *Lucian.* 2 hrs.

A general reading-course in prose, with discussion of the life and times of Lucian and of his influence upon modern literature. The *Dream*, *Charon*, *Timon*, *Angler*, and *True History* are read, with many minor pieces, including the *Dialogues of the Gods* and *Dialogues of the Dead*.

Mr. BASSETT :—

- *26 *Greek Composition.* 1 hr.

The course is designed especially for those who intend to teach.

[Thursday, 3.00 P. M.]

Dr. WRIGHT :—

- *27 *Aristophanes and his Caricatures of Athenian Citizens.* 2 hrs.

The *Acharnians*, *Clouds*, *Knights*, and *Wasps*, with special reference to the lampoons directed at Euripides, Socrates, Cleon, and Nicias. Comedy as a weapon of reform.

LATIN

LATIN LITERATURE

Professor PECK :—

- [28 *The Epistles of Horace and the Satires of Persius.* 2 hrs.
Omitted in 1904-1905.]

- 29 *Lucretius.* 2 hrs.
[Saturday, 9 30-11.20 A. M.]

Professor MORRIS :—

- [30 *Plautus.* 2 hrs.

Lectures introductory to the study of Plautus, followed by a critical study of the *Bacchides*. Students should have the complete Teubner text (Goetz-Schoell).

Omitted in 1904-1905.]

Professor OERTEL :—

31 *Selections from Latin Authors on the Latin Language.*

2 hrs.

Reading and interpretation of selected passages from Varro, Cicero, Caesar, Quintilian, Aulus Gellius, possibly also from Festus and some grammarians in Keil's collection which bear on questions of Latin grammar.

Assistant Professor INGERSOLL :—

32 *Latin Comedy.*

2 hrs.

A dozen or more plays of Plautus, and the principal fragments of the other Comic Writers except Terence. A course in rapid reading, designed to supplement the critical work on Plautus in other courses. Students intending to take this course should provide themselves in advance with the Goetz-Schoell *Plautus* and Ribbeck's *Comicorum Romanorum Fragmenta* (3d ed.), both published by B. G. Teubner, Leipzig.

Professor PECK :—

[*33 *The Character and Reign of Tiberius.*

Tacitus (*Annals*, i-vi), Suetonius (*Tiberius*), and Velleius Paterculus. The characteristics of "Silver" Latin.

Omitted in 1904-1905.]

*34 *Roman Oratory.*

2 hrs.

Cicero (*Brutus*), Quintilian (*x* and *xii*), and Tacitus (*Dialogus*). History and character of Roman oratory.

[Tuesday and Thursday, 10.30 A. M., 21 Phelps Hall.]

Professor MORRIS :—

[*35 *Vergil.*

2 hrs.

An introduction to Vergil, intended to give students who expect to teach Latin an acquaintance with the best editions and commentaries and with works on special topics.

Omitted in 1904-1905.]

Professors PECK and H. P. WRIGHT :—

*36 *Juvenal, Martial, and Pliny's Letters.*

2 hrs.

Roman private life ; literary and social conditions at Rome in the early empire.

[Tuesday and Thursday, 9.30 A. M., 11 Phelps Hall.]

Assistant Professor INGERSOLL :—

*37 *Latin Literature.* 2 hrs.

A general survey of the whole field, aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, both as to form and as to subject, and to characterize the several periods of the literature in the light of the changing conditions under which the development took place. Lectures, illustrative readings, and direction of the student's private reading. The course is designed especially for those who wish to take their bearings in preparation for special work in this department, and for those who, while their chief interest lies in other departments of study, desire to get a general notion of the range and leading characteristics of a literature in which their previous reading has been more or less desultory.

[Monday and Friday, 9.30 A. M., 12 Phelps Hall.]

Mr. BANCROFT :—

*38 *The Fasti of Ovid.* 2 hrs.

With special reference to Roman religion.

[Monday and Friday, 2.00 P. M., 19 Phelps Hall.]

THE LATIN LANGUAGE

Professor MORRIS :—

39 *Latin Syntax.* 2 hrs.

Introductory lectures on the history of syntactical study and on the principles and methods of investigation; discussion of syntactical systems in grammars and text-books. The greater part of the year will be spent upon a study of the ablative constructions, for which each member of the class will collect about a thousand examples.

One session weekly of two hours in length, which may be extended to three hours.

[Tuesday, 3.00–5.00 P. M.]

Professor PECK :—

[*40 *Early Latin.* 2 hrs.

Study of inscriptions and of the ante-classical literature, based on Allen's *Remnants of Early Latin*, Merry's *Fragments* and Smith's *Selections*.

The course is largely philological and critical, dealing with the development of forms, constructions and literature, and it is especially commended to those who expect to teach Latin.

Omitted in 1904-1905.]

Professor OERTEL :—

- [41 *The Italic Dialects and Comparative Grammar of Latin Sounds and Inflection.* 2 hrs.

Students should provide themselves with Buck's *Grammar of Oscan and Umbrian* (Ginn & Co., 1904 ; price \$2.90), and either *Sommer's Handbuch der lateinischen Laut- und Formenlehre* (Heidelberg, 1902 ; 10 marks) or the *Lateinische Grammatik in Müller's Handbuch* (3d ed., München, 1900 ; 13 marks). The latter contains besides *Stolz' Laut- und Formenlehre*, also *Schmalz' Syntax*.

Omitted in 1904-1905.]

- *42 *Practice in Writing Latin Prose (Advanced course).*

2 hrs.

A study of Cicero's *Laelius* from the stylistic point of view. M. Seyffert's edition (2d ed. revised by C. F. W. Müller, Leipzig, 1876) is recommended. Exercises in translation and free composition. Students should provide themselves with H. Menge's *Repetitorium der Lateinischen Syntax und Stylistik* (7th ed., 1900) and his *Kurzgefasste Synonymik* (4th ed.).

Assistant Professor CLARK :—

- *43 *Latin Composition.*

2 hrs.

This course is designed for undergraduates who plan to teach the Classics. It is sufficiently exhaustive to serve as final for men wishing to go into teaching immediately after graduation ; but it is subsidiary to course 42, which should be taken as its complement. Text-book work is supplemented by original composition and conversation.

[Monday and Friday, 3.00 P. M.]

COURSES IN SPECIAL SUBJECTS

Professor LANG :—

44 *Low Latin.* 1 hr.

The aim of this course is to give an historical account of the popular speech of Rome and of the Roman provinces, and also an outline of its grammar and syntax, as it is disclosed to us by classical Latin, the testimony of the Latin grammarians, inscriptions, medieval documents, and the consensus of the Romance languages.

The course is taken up with lectures on the history and the grammar of Low Latin and the reading of a Low Latin text. For the present the following is used: P. Geyer, *Itinera hierosolymitana saeculi iii-viii* (vol. 39 of *Corpus Scriptorum Ecclesiasticorum Latinorum*), Vienna, 1898. Students should come provided at the beginning with E. Gorra's *Lingue neolatine* (Milano Hoepli, 1894). Students who wish to take this course must have a good training in Greek and Latin, and at least a reading knowledge of French or Italian.

[Tuesday, 8.30 A. M., K, O.]

Assistant Professor CLARK :—

*45 *Latin Literature of the Early Middle Ages.* 2 hrs.

This course aims to follow the rise and development of Christian Latin Literature and the history of culture, up to the Caroline period. Linguistic phenomena and critical method are constantly kept in view. Ability to read French and German is required. Lectures accompany the rapid reading of the following works, which the student is to procure:—Hieronymus, *De viris illustribus liber singularis . . . et epistolae selectae*, Tamietti, Turin, Libreria Salesiana; Eugippius, *Vita Severini*, Mommsen, Berlin, Weidmann, 1898; Grégoire de Tours, *Histoire des Francs*, livres I-VI, Paris, Picard, 1886; *Vita S. Bonifacii*, Nürnberger, Breslau, 1895; Beda, *Historia Ecclesiastica*, Holder, Freiburg, 1890; *Regula Benedicti*, Wölfflin, Leipzig, Teubner, 1895; Einhardus, *Vita Caroli*, Waitz, Hanover, Hahn, 1880. These books cost about \$4. If time permits, one or two other works may be read.

[46 *Latin Literature of the Late Middle Ages.* 2 hrs.

This course covers the period from Charlemagne to Dante. While complementary to 45, and similar to it in general scope and method, it lays especial stress on the relationship of the Latin and the modern literatures and on the transitional character of medieval culture.

Omitted in 1904-1905.]

Assistant Professor INGERSOLL :—

- *47 *Roman Law.* 2 hrs.
An elementary and general course, for the classical student or the student of law.
[Tuesday and Thursday, 9.30 A. M., 12 Phelps Hall.]

Assistant Professor CLARK :—

- 48 *Introduction to Text Criticism.* 2 hrs.
Reconstruction of the text of Ammianus Marcellinus in the light of Wilhelm Meyer's Law and on the basis of new collations. Students will provide themselves with either Eyssenhardt's (Berlin, 1871) or Gardthausen's (Berlin, 1875) edition.
- [49 *Latin Palaeography.* 2 hrs.
Facility in reading and dating MSS. is acquired by systematic study of the rich University collection of facsimiles. The origin and the bearing upon text criticism of MS. errors are constantly observed. The development of late Latin and Medieval literatures is taken up in detail.
Omitted in 1904-1905.]

CLASSICAL ARCHAEOLOGY

Dr. BAUR :—

- *50 *Greek Art—I. Sculpture.* 2 hrs.
Lectures and quizzes by the instructor. Special study of the literary sources by the students.
- [*51 *Greek Art—II. The Lesser Arts.* 2 hrs.
This course treats briefly of Greek painting, ceramics, terracottas, bronzes and other metal work, coins and gems.
Omitted in 1904-1905.]
- 52 *Greek Architecture.* 2 hrs.
The various forms of building-construction are successively examined in informal lectures, supplemented by occasional reports from members of the class.
- 53 *Topography and Monuments of Athens.* 2 hrs.
A combination of the historical and the strictly topographical methods of treatment is adopted. Those who take this course should be provided with the Teubner text of *Pausanias*.

54 *Archaeological Exercises.* 2 hrs.

Exercises in the interpretation of archaeological monuments, as illustrating classic life and literature. The monuments are selected largely with reference to the courses offered in Greek and Latin authors. No preparation is required.

*55 *Roman and Etruscan Art.* 2 hrs.

This course includes such subjects as Roman architecture, Graeco-Roman sculpture, topography and monuments of Rome and of Pompeii; the domestic arts, such as household utensils, glass, coins, frescoes, mosaics, textiles, terra-cottas. Select topics are investigated by the members of the class.

Professor PECK :—

56 *Introduction to Roman Archaeology.* 2 hrs.

This course, dealing with the material development of Rome, includes such subjects as the physical peculiarities of Latium, the situation and topography of Rome, the Forum and imperial Fora, temples, tombs, arches and other monuments, roads, money. Special topics will be assigned for investigation and discussion.

[Wednesday, 9.30—11.20 A. M.]

INDO-IRANIAN PHILOLOGY

Professor HOPKINS :—

*57 *Elementary Sanskrit.* 2 hrs.

Instruction in Sanskrit, beginning with Whitney's *Sanskrit Grammar*, and passing on to Lanman's *Reader*.

The elementary course in Sanskrit is designed especially for classical students, but it may be taken with profit by students of German or English, especially by those who intend to become teachers, and it is indispensable for those who pursue studies in the comparative grammar of Greek and Latin. The course is continued through the year, the first term being devoted mainly to the grammar, the second to interpretation. By the end of the year the student will have read portions of the classical and Vedic selections in Lanman's *Reader*, and be fitted to pursue the work of the advanced course in the following year. On the other hand, he will have attained such familiar acquaintance

with Sanskrit grammatical forms and syntactical structure, as greatly to aid his comprehension of parallel phenomena in other Aryan languages.

[Tuesday and Thursday, 3.00 P. M.]

58 *Advanced Sanskrit.* 2 hrs.

Selections from the Rig-Veda and Brahmanic texts.

This course is intended for those that have had already at least one year's instruction in Sanskrit. It is addressed particularly to students of literature, social institutions, and religion. The first half of the year is occupied with reading selections from the Vedic Hymns, which are not only a priceless heirloom of early religious thought, but also a mine of information in regard to early institutions. The special topic of the second term's reading is the philosophical portions of the first Brahmanic works and Upanishads, the earliest Aryan prose.

[Tuesday and Thursday, 4.00 P. M.]

59 *History of Sanskrit Literature.* 2 hrs.

This course consists in a review of Vedic and classical Sanskrit literature from the earliest times to the Puranic period, with extracts to illustrate the various phases of literary development. As it is expected that those who take this course will ordinarily have some knowledge of Sanskrit, the translation is made with reference to these students especially, and they are provided as far as possible with the original texts, as read from day to day. In this way this course forms also a reading-exercise parallel to that in Advanced Sanskrit.

[Wednesday, 3.00 P. M.]

[60 *Pali Language and Literature.* 1 hr.

Intended for those who desire to begin the study of Buddhistic scriptures. Pali is easy for advanced Sanskrit students, and offers much of interest in respect of literature and religion.

Omitted in 1904-1905.]

61 *Avestan Language and Literature.*

For advanced students of Sanskrit.

[Wednesday, 4.00 P. M.]

[62 *Comparative Religion.* 1 hr.

A course of twelve lectures throughout the year. These lectures are in two parts. The first part takes up the study of religion from the comparative point of view, treating of the

underlying principles of religion as shown in the religious phenomena of different nations and races, from lower to higher forms of religious expression. The second part consists of lectures on special religions, illustrating the principles explained in the first part. They are open to all Graduate students, and to members of the Divinity School, and of the Junior and Senior classes of the College.

Omitted in 1904-1905.]

COMPARATIVE GRAMMAR, PHONETICS, AND LINGUISTICS

Professor HOPKINS :—

63 *Introduction to Comparative Syntax.* 1 hr.

This course consists in an analysis of the syntactical facts presented by the Aryan languages, particularly Sanskrit, Greek, Latin, and early German. It is intended especially for students of these languages who desire a more thorough acquaintance with the problems of comparative syntax. To solve these problems a knowledge, if not of the Sanskrit language, at least of Sanskrit syntactical phenomena is necessary, and the lectures are accordingly planned with a view to explain these phenomena to those who have not studied Sanskrit as well as to those who have done so.

[Monday, 3.00 P. M.]

Professor OERTEL :—

64 *Phonetics.*

A general and rather elementary introduction to Phonetics, based on a study of the English, French, and German sound systems. The course is intended to furnish a basis both for the study of the historical phonology and for the practical teaching of the various languages. Sweet's *Primer of Phonetics* (Oxford, 1890; \$0.90), and Viëtor's *Elemente der Phonetik* (3d ed., Leipzig, 1894; 8 marks), should be in the hands of the student. To students of English, Johan Storm's *Englische Philologie* (2d ed., Leipzig, 1896; 20 marks), is recommended. Attention is drawn to course V, 16 (practical exercises in French pronunciation).

65 *Eighteen Lectures on Indo-European Phonology.*

These lectures are intended to present in rough outlines some of the most important facts of Indo-European phonology (viz: the vowel-system, the various problems of ablaut, the gutturals, and accent) and to give such information as will enable the student to use intelligently the modern comparative grammars of Greek, Latin, and German, or Brugmann's *Compendium*.

66 *Linguistics.*

2 hrs.

An introduction to the scientific study of linguistic development. The course, which is general in its character, is intended for all students, of the classics as well as of the modern languages, who wish to become acquainted with the general principles and chief problems of linguistic science, modern methods of research, the tendencies of recent investigations, the nature of linguistic phenomena, etc. After briefly discussing the topics treated in the instructor's *Lectures on the Study of Language* (New York, Scribner's Sons, 1901), the more important types of language-structure, together with the fundamental facts of syntax and the problem of the origin and rise of language, will be taken up. In connection with this, selected chapters of Paul's *Prinzipien der Sprachgeschichte* (3d ed., 1898), and of Wundt's *Völkerpsychologie*, Band I: Die Sprache (2 vols., 1900) will be critically examined. Stress will be laid on the psychological aspect of linguistic phenomena and on familiarizing the student with the more recent literature. No knowledge of Sanskrit is necessary for this course.

V. MODERN LANGUAGES AND LITERATURES

THOMAS R. LOUNSBURY, L.H.D., LL.D.	HENRY A. BEERS, M.A.
ALBERT S. COOK, Ph.D., L.H.D.	HENRY R. LANG, Ph.D.
ARTHUR H. PALMER, M.A.	FRED'K M. WARREN, Ph.D.
GUSTAV GRUENER, Ph.D.	WILBUR L. CROSS, Ph.D.
CHARLTON M. LEWIS, Ph.D.	WILLIAM L. PHELPS, Ph.D.
ROBERT N. CORWIN, Ph.D.	ROBERT L. SANDERSON, M.A.
CHARLES S. BALDWIN, Ph.D.	CHARLES C. CLARKE, Jr., B.A.
KENNETH MCKENZIE, Ph.D.	CLYDE C. GLASCOCK, Ph.D.
WILLIAM O. FARNSWORTH, M.A.	CHARLES G. OSGOOD, Ph.D.
JOHN C. ADAMS, M.A.	HOLLON A. FARR, M.A.
RUDOLPH SCHWILL, Ph.D.	ROBERT K. ROOT, Ph.D.
FREDERICK B. LUQUIENS, B.A.	ALBERT E. CURDY, Ph.D.
CHARLES U. CLARK.	

As auxiliary to the regular courses in modern languages and literatures, four clubs hold regular sessions throughout the year. These are The MODERN LANGUAGE CLUB, The ENGLISH CLUB, The GERMAN JOURNAL CLUB, and The ROMANCE JOURNAL CLUB. The first two in particular aim to deal with subjects not too technical in character, and thus to promote a sense of comity among all the workers in the same field.

The MODERN LANGUAGE CLUB, formed of instructors and students in the departments of English, Romance Languages, and German, holds its regular meetings on the second Saturday evening of each month for the reading and discussion of original papers, and for reports of progress in the field of these studies.

The ENGLISH CLUB, to which are invited all persons, whether members of the University or not, who are interested in the study or teaching of the English language or literature, meets on alternate Monday evenings to listen to the presentation of some topic, and engage in the informal discussion of it. The club never remains in session over an hour, and thus opportunity is afforded for keeping other engagements the same evening.

The GERMAN JOURNAL CLUB has for its object the presentation of reports on the most interesting periodicals published in German, and devoted to the science of Germanic philology.

The ROMANCE JOURNAL CLUB, consisting of the instructors and students in the departments of Romance Languages and Literatures, meets in K, Osborn Hall, every other Saturday morning to report on, and discuss, the results of recent scientific research in this field of study.

The GERMAN SEMINARY ROOM in Fayerweather Hall, where the Journal Club meets, contains a small working library for the use of advanced students in the Germanic languages. It also serves as a general study and working room for such students.

The ENGLISH SEMINARY ROOM, at 135 Elm st., which has lately been enlarged for the better accommodation of graduate students in English, contains the nucleus of a working library. This room is general headquarters for the graduate students in English, and serves for the meetings of the English Club, and for similar purposes.

ROMANCE LANGUAGES

Professor LANG :—

[1 *Low Latin.*

[See Classical Philology IV, 44.]

Assistant Professor C. U. CLARK :—

2 *Palaeography.*

[See Classical Philology IV, 49.]

3 *Latin Literature of the Early Middle Ages.* (First year's Course.)

[See Classical Philology IV, 45.]

[4 *Latin Literature of the Early Middle Ages.* (Second year's Course.)

[See Classical Philology IV, 46.]

Omitted in 1904-1905.]

FRENCH

Professor LANG :—

- 5 *Old French.* 2 hrs.

Introduction to the study of Old French language and literature in general, followed by a more especial study of Anglo-Norman. G. Paris's *Extraits de la Chanson de Roland* (7^{me} éd., Paris, 1902), and the same author's *La littérature française au moyen-âge* (Paris, 1888) will be used.

Mr. LUQUIENS :—

- 6 *General Reading in Old French.* 2 hrs.

This course is intended to supplement course 2. Discussion of the relations of the Old French Literary dialects; explanation in the class-room of representative texts; additional outside reading under the direction of the instructor.

The following texts will be used: *Aucassin u. Nicolette* (H. Suchier, 4th ed., Paderborn, 1899); *Ivain, Chrétien de Troies* (W. Foerster, Halle); *Roman de la Rose ou de Guillaume de Dole* (G. Servois, Société des Anciens Textes Français, 1893).

Dr. CURDY :—

- 7 *Old French Syntax.* 1 hr.

Lectures on the syntax of the old French period with reference to the Latin and Modern French rules of syntax.

FRENCH LITERATURE

Professor WARREN :—

- 8 *The Carolingian Epic.* 2 hrs.

- 9 *The Romantic School.* 1 hr.

Assistant Professor C. C. CLARKE :—

- 10 *French Poetry of the Nineteenth Century.* 1 hr.

Lectures and readings intended to familiarize the student with the work of representative poets from Lamartine to Henri de Regnier. The poetic evolution in France during the century will be discussed, and some exposition of the versification will be offered for the purpose of imparting an appreciation of French metric movement and cadence.

Course given in French.

Assistant Professor SANDERSON :—

- *11 *History of French Literature.* 2 hrs.

A study of French Literature from the origins to 1900. Only works written in modern French will be read, the matter previous to the seventeenth century being treated in lectures. The course will be conducted in French.

- *12 *Practice in Writing and Speaking French.* 2 hrs.

This course will be conducted entirely in French. It is especially intended for graduates or undergraduates who read French with ease and understand it when they hear it spoken.

[Wednesday, Friday, 11.30 A. M.]

- *13 *Molière.* 1 hr.

A linguistic and literary study of some of Molière's best plays. The course will be conducted in French.

Mr. FARNSWORTH :—

- 14 *Development of Literary Criticism in France.* 1 hr.

A survey of criticism from the Renaissance to the present time. Boileau, Voltaire, Mme. de Staël, Sainte-Beuve, Taine, and others will be studied in their relation to groups. Collateral reading will be required.

PHONETICS

Professor OERTEL :—

- 15 *Phonetics and Linguistics.*

[See Courses IV, 64, 66.]

Assistant Professor C. C. CLARKE :—

- 16 *Phonetics of Modern French.* 1 hr.

Lectures, with exercises, on the phonetics of French as it is spoken to-day, based on personal observation, supported by the recent publications of Rousselot and Paul Passy.

Incidentally, attention will be directed to the history of French pronunciation since the fifteenth century, in so far as it serves to explain present peculiarities.

The course is offered to such graduate students and others as can read French fluently and have some knowledge of general phonetics. It will be a practical application of the science, and is intended to be of especial value to teachers and those who are making a serious study of the French language.

This course will be conducted in French when generally desired.

PROVENÇAL

Professor LANG :—

- 17 *Provençal Language and Literature.* 2 hrs.

This course begins with lectures on the historical grammar of old Provençal, after which the origin and growth of Provençal lyric poetry, its style and metre, are studied in connection with the reading of selections from the works of the Troubadours. Students will provide themselves from the beginning with Appel's *Provenzalische Chrestomathie* (Leipzig, 1901), and Restori's *Histoire de la littérature provençale* (Montpellier, 1894).

- 18 *Seminary Course in Romance Languages and Literatures.* 1 hr.

This course is designed to give competent students opportunity and guidance in original research.

During the coming year, the work in this course will center on the study of the Old Spanish epic.

SPANISH

Professor LANG and Dr. SCHWILL :—

- 19 *Spanish (Elementary Course).* 3 hrs.

In this course, stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge of the language. Knapp's *Spanish Grammar* and Alarcón's *El Capitán Veneno* will be used as text-books.

[Monday, Wednesday, Friday, 9.30 A. M., K. O.]

Professor LANG :—

- 20 *Spanish Prose of the Nineteenth Century.* 2 hrs.

The object of this course is to give the student fluency in reading. In addition to the reading done in the class-room, a number of texts will be assigned for private study. The following will be among the works to be read : Perez Galdos, *Doña Perfecta* ; Fernan Caballero, *La Gaviota* ; Alarcón, *El Escándalo* ; Valdés, *La Alegría del Capitán Ribot* ; Coloma, *Pequeñeces* ; Juan Valera, *A Vuela Pluma. Artículos literarios y políticos.*

[Tuesday and Thursday, 9.30 A. M., K. O.]

Dr. SCHWILL :—

- 21 *Reading and Composition in Spanish.* 2 hrs.

This course is designed for those who require the use of Spanish for commercial purposes. The writing of letters and the reading of commercial papers will be especially considered.

[Tuesday, Thursdays, 10.30 A. M.]

Professor LANG :—

- 22 *Spanish Prose of the Sixteenth and Seventeenth Centuries.* 2 hrs.

This course is open only to students who have taken course 19. or who shall satisfy the instructor as to their fitness to take it by passing a special examination. *Lasarillo de Tormes*, Cervantes' *Don Quijote* and *Novelas Ejemplares*, etc., will be read in class, while additional work will be assigned for private study.

Given only if taken by at least six undergraduates.

[Mondays and Fridays, 11.30 A. M.]

Dr. SCHWILL :—

- 23 *The Spanish Drama of the Sixteenth and Seventeenth Centuries.* 2 hrs.

This course will consist of lectures in connection with the reading in class of selected plays by Lope de Vega, Tirso de Molina, Calderon, etc. Work will be assigned for reports to be made in class. Open to students who have had two years of Spanish or its equivalent.

[Mondays and Fridays, 11.30 A. M.]

Professor LANG :—

- [24 *General View of Spanish Literature.* 1 hr.

The aim of this course is to give the student an outline of the development of Spanish literature. In addition to lectures and the reading of classical texts in the class-room, outside reading will be required. An extra hour may be given at the option of the instructor. Open to students who have had two years of Spanish or the equivalent.

Omitted in 1904-1905.]

- [25 *Beginnings of Spanish Literature.* 1 hr.

This course comprises a study of the early literature of Castile previous to the fifteenth century, and its relations with the literatures of France and Italy. Students will come provided with E. Gorra's *Lingua e letteratura spagnuola delle origini* (Milano, Hoepli, 1898).

Omitted in 1904-1905.]

Mr. LUQUIENS :—

- 26 *Spanish Lyric Poetry.* 2 hrs.

A course of lectures on the origins and development of Lyric Poetry in Spain, special attention being given to the poets of the fifteenth and sixteenth centuries, and to their relations with the poets of France and Italy. Students will be asked to prepare papers on the various phases of the subject; they should procure Ford's *Anthology* (Silver, Burdett & Co., New York).

ITALIAN

Dr. MCKENZIE :—

- *27 *Italian (Elementary Course).* 3 hrs.

This course is open to those who have studied French for at least two years, or who shall otherwise satisfy the instructor of their fitness to take Italian. Stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge.

Grandgent's *Italian Grammar* and *Italian Composition*; selections from modern authors.

[Tuesday, Thursday, Saturday, 9.30 A. M.]

- *28 *Dante's Life and Works.* 2 hrs.

This is a strictly literary course, open only to those who have passed through course 27, or who shall otherwise satisfy the instructor of their fitness to take it. After some introductory lectures on Italian poetry previous to Dante, and its relations to the literature of Provence and of France, the *Vita Nuova* and selections from the *Divina Commedia* will be read and explained.

Students will provide themselves with Casini's edition of *La Vita Nuova* (2d ediz., Firenze, 1891), Fraticelli's edition of *La Divina Commedia* (Firenze, 1898), and Gardner's *Dante* (Temple Series), 1900.

[Wednesday, Friday, 11.30 A. M.]

*29 *Italian Literature.* 2 hrs.

Lectures on Italian literature, with collateral reading. This course may be taken advantageously in connection with one of the other courses in Italian, but need not necessarily be so taken. A knowledge of Italian is not required.

[Wednesday and Friday, 11.30 A. M.]

[30 *Petrarch and Boccaccio.* 2 hrs.

A study of the Italian writings of Petrarch and Boccaccio, and their influence on the humanistic movement. Rigutini's *Le Rime di Francesco Petrarca* (Milano, Hoepli, 1896); Fornaciari's *Novelle scelte dal Decamerone di G. Boccaccio* (Firenze, Sansoni, 1889): Omitted in 1904-1905.]

31 *Italian Literature of the Thirteenth Century.* 1 hr.

Reading of texts, with reference both to their literary qualities and to the history of the language. Particular attention will be paid to the early lyric poetry of Italy and its relation to the poetry of Provence.

Monaci's *Crestomasia italiana dei primi secoli*; Casini, *Forme metriche italiane*.

[32 *Fable-literature in the Middle Ages.* 1 hr.

Study of the history of Æsopic fables from ancient times to the present, with special reference to the medieval French and Italian collections; the relation between the fables and the beast-epic. Lectures, reading, reports on assigned topics.

Omitted in 1904-1905.]

GERMANIC LANGUAGES

GERMAN

Professor PALMER :—

The following courses, 33, 34, 35, 47 and 48, will be given in 1904-1905, according to circumstances and the needs of the graduate students actually in attendance.

33 *Introduction to Germanic Philology.* 2 hrs.

A course introductory to the general study of Germanic philology, dealing with its history, methods, fields, and fundamental facts. The basis of the work is Paul's *Grundriss der Germanischen Philologie*, of which portions are read, discussed, and supplemented by informal lectures.

34 *Gothic.* 2 hrs.

An introductory course, especially for those who intend to study German or English historically, in the study of Gothic and its phonological relations to both earlier Indo-Germanic and later Germanic languages. Braune's *Gotische Grammatik* or Streitberg's *Gotisches Elementarbuch*, Heyne's *Ulfilas*, Streitberg's *Urgermanische Grammatik* or Dieter's *Altgermanische Dialekte*, and Henry's *Comparative Grammar of English and German*.

35 *Early Dramatic Literature of Germany.* 3 hrs.

Studies in the dramatic literature of the sixteenth and seventeenth centuries in Germany.

*36 *Goethe, Life, Shorter Poems and Faust.* 2 hrs.

Together with outline study of Goethe's life a large number of his shorter poems will be read in chronological order, and then particular attention given to the translation and interpretation of *Faust* (both parts).

[Monday and Friday, 9.30 A. M., F. O.]

*37 *Goethe, Prose Works.* 1 hr.

Reading and discussion of Goethe's more important prose works and utterances in letters, journals and conversations.

[Wednesday, 8.30 A. M., F. O.]

- [*38 *History of German Literature, 1624-1832.* 2 hrs.

The development of German literature will be studied from the time of Opitz to Goethe's death. The text-books will be: Kluge's *Geschichte der Deutschen National-Litteratur*, Scherer's *History of German Literature*, Max Müller's *German Classics*, and Hillebrand's *German Thought from the Seven Years' War to Goethe's Death*.

Omitted in 1904-1905.]

Professor GRUENER :—

- [39 *German Literature of the Reformation Period (1500-1624).* 3 hrs.

The development of German literature is studied from the beginning of the Reformation to the time of Opitz. Characteristic works of the important writers of the period are read, chiefly for literary purposes, though also with reference to the political, social, and religious conditions of the times.

Omitted in 1904-1905.]

- [*40 *The Drama of Schiller and his Contemporaries.* 2 hrs.

Rapid reading and literary study of Lessing's *Nathan der Weise*, Goethe's *Götz von Berlichingen* and *Iphigenie auf Tauris*, and Schiller's *Wallensteins Tod*. Lectures on the literature of the period with especial reference to the development of the German drama.

Omitted in 1904-1905.]

Professor CORWIN :—

- [41 *Old High German.* 3 hrs.

A rather detailed course in the oldest High German dialects and literature. Braune's *Althochdeutsche Grammatik* and *Althochdeutsches Lesebuch*, and the collateral literature for reference.

Omitted in 1904-1905.]

- 42 *History of New High German.* 2 hrs.

The earlier periods of the language will first be surveyed, for the purpose of gaining a comprehensive idea of the chief linguistic phenomena and their causes. Upon this basis a more special study will be made of the origin and development of New High German.

Dr. GLASCOCK :—

- 43 *Middle High German.* 3 hrs.

Hartmann: *Der Arme Heinrich and Iwein. Nibelungenlied.* Selected poems of Walther von der Vogelweide. Selections from Wolfram von Eschenbach's *Parzival*. Lectures and papers.

- [44 *Phonetics of Modern German.* 1 hr.

During the first half-year a course of lectures and practical exercises in phonetics will be given, the primary object of which will be scientific knowledge of the processes involved in the correct pronunciation of modern German.

Omitted in 1904-1905.]

- [45 '*Storm and Stress*' in German Literature. 1 hr.

The period in German literature known as *Sturm und Drang*, its origin, and its relation to early Romanticism, will be studied. A course of lectures will be given, and selections will be read from Klinger, Leisewitz, Wagner, Lenz, Maler Müller, Schubart, and, perhaps, Goethe and Schiller. The text-books will be: *Stürmer und Dränger, Deutsche National-literatur*, hrsg. von J. Kürschner, Bände 79-81, Stuttgart.

Omitted in 1904-1905.]

Mr. FARR :—

- *46 *German Literature of the Nineteenth Century.* 2 hrs.

This course is designed to give the student a survey of German literature after the death of Goethe. Representative works of the best known authors will be read in class, and occasional lectures will be given to show the development of German literature during the nineteenth century.

[Tuesday and Thursday, 11.30 A. M.]

SCANDINAVIAN

Professor PALMER :—

- 47 *Old Norse (Icelandic).* 3 hrs.

Grammar, and reading in the Sagas and the Elder Edda.

- 48 *Norwegian and Danish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

-
- [49 *Swedish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

Omitted in 1904-1905.]

ENGLISH

Professor LOUNSBURY :—

- 50 *The Early Victorian Era ; Tennyson and his Contemporaries.* 2 hrs.

Professor BEERS :—

- 51 *Milton and his Contemporaries.* 2 hrs.

The subject will be treated with special reference to the political and religious conflict of the times. All of Milton's English verse will be read, a few of his Latin poems, and much of his prose. The work of the Church poets and Cavaliers will be examined, as also various diaries and memoirs, and portions of the writings of Fuller, Clarendon, Butler, Marvell, Bunyan, etc.

[Monday and Wednesday, 11.30 A. M.]

- 52 *Medieval Allegory.* 2 hrs.

The *Purgatory of Dante*, the *Romaunt of the Rose* and a portion of *Piers Plowman* will be read in class, together with other texts illustrative of the subject. A fair reading knowledge of Italian is required of students electing this course.

[Tuesday and Thursday, 5.00 P. M.; second term, 3.00 P. M.]

Professor Cook :—

The strictly graduate courses offered below are given according to circumstances and the needs of the graduate students actually in attendance; and special attention is given to the supervision of individual research in any part of the general field.

53 *Encyclopaedia and Methodology of English.* 2 hrs.

This course is designed to acquaint the student with philological principles in general, with the more important branches of scholarship relative to the English language and literature, with a few of the representative books in each of these branches, and with the scope and method of research in this department.

A knowledge of German is essential in this course.

[Wednesday, 4.00 P. M., 135 Elm st.]

54 *Theories of Poetry.* 2 hrs.

A course in the theories of poetry in general, and in the principles of criticism applicable to its various departments, as the epic, dramatic, and lyric. Discussions and papers on the basis of standard works, such as Aristotle's *Poetics*, Sidney's *Defense of Poesy*, Woodbridge's *The Drama*, Boileau's *Art of Poetry*, Lessing's *Laokoon*, and others of similar character. Reading of masterpieces to illustrate and extend the principles derived from theoretic works.

[Wednesday, 3.00 P. M., 135 Elm st.]

55 *Dante in English.* 2 hrs.

A course primarily in the *Divina Commedia* and the *Vita Nuova*, though selections from the other works are also read. Two or three of the best English translations are employed, together with such reference-books as may be necessary. Much attention is bestowed upon the historical and literary background of the poet and his works.

[Tuesday, 3.00 P. M., 135 Elm st.]

[56 *Literary Types.* 2 hrs.

A survey of European literature, with reference to the characterization and illustration of the more important species. Candidates must satisfy the instructor with regard to their proficiency in French, German, and Latin.

Omitted in 1904-1905.]

57 *Advanced Old English.* 2 hrs.

Selected works read especially with reference to the acquisition of scholarly methods. The course this year begins with the study of Cook's edition of Cynewulf's *Christ*.

A knowledge of German is essential in this course.

[Thursday, 11.30 A. M., 135 Elm st.]

58 *Seminary in English Literature.* 3 hrs.

A critical study of some representative writer or department of literature. In 1894-95, Ben Jonson was selected; in 1895-96, Browning; in 1896-97, Chaucer; in 1897-98, the Jacobean Drama; in 1898-99, Spenser; in 1899-1900, 1900-1901, 1901-1902, 1902-1903, and 1903-1904, Chaucer.

[Alternate Mondays, 7.00 P. M., 135 Elm st.]

59 *Historical English Prosody.* 2 hrs.

A brief consideration of metres in the related languages, followed by an outline of the subject traced from the Old English period to the present day.

[Tuesday, 11.30 A. M., 135 Elm st.]

60 *Old and Middle English.* 2 hrs.

An elementary course in the beginnings and earlier development of the English language and literature. Reading is begun at the earliest practicable moment, and the study is made as literary in character as is consistent with a thorough grounding in the rudiments of the language. This course, while it is indispensable to all graduate students and future teachers of English, and will also be of service to students of English history and of the English Bible, is designed as well for those who, in the pursuit of general culture, are unwilling to remain ignorant of the foundations of the English language and literature.

[Tuesday and Thursday, 10.30 A. M., C. O.]

Professor LEWIS:—

61 *Verse Composition.* 1 hr.

Fortnightly practice in composition, with regular appointments for consultation and criticism. A study of the chief varieties of English verse and stanza (such as blank verse, heroic verse, the sonnet, etc.).

62 *Shakespeare.* 1 hr.

A minute study of *Macbeth* and *Hamlet*. Critical examination of the text, and of the work of the leading commentators, and investigation of sources.

[Tuesday, 9.30 A. M.]

63 *Nineteenth Century Poets.* 1 hr.

The course will include Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Browning, Rossetti, Clough, Arnold, Morris, Swinburne, and others if time permits. A large amount of reading will be required.

[Thursday, 9.30 A. M.]

Professor PHELPS :—

[64 *Elizabethan Literature.* 2 hrs.

Studies in the poetry and prose of the Elizabethan period, exclusive of the drama. Wyatt, Surrey, Ascham, Foxe, Painter, Lyly, Raleigh, Greene, Nash, Lodge, Marlowe, Hooker, Sidney, Spenser, Shakespeare, Davies, Drayton, Chapman, and others. Lectures, discussions, and preparation of special papers by members of the class.

Omitted in 1904-1905.]

65 *English Literature of the Seventeenth Century.* 2 hrs.

A rather minute study of English poetry and prose from Donne to Dryden. The poetry of Donne, Drummond, Herbert, Crashaw, Vaughan, Quarles, Carew, Suckling, Herrick, Cowley, Milton, Waller, Marvell, Butler, and Dryden is read; also the prose of Burton, Browne, Taylor, Pepys, Fuller, Walton, Clarendon, Milton, Bunyan, and Dryden. The social life of the times is discussed.

[Thursday, 3.00 P. M.]

*66 *Tennyson and Browning.* 2 hrs.

The autumn term will be occupied with the study of Tennyson. Practically all of his poetry will be read. His theory of the poet's art, his skill in technique, his artistic expression, and his representation of nineteenth century ideas, will be studied in detail.

After Christmas, the complete works of Browning will be taken up, only those being omitted which are unnecessary in forming a general estimate of his work as a poet. His personal force, his growth, his attitude toward his art, and his place in nineteenth century poetry will be considered; but the chief attention will be paid to his analysis of human life and character.

The instruction in this course will be by means of recitations, discussions, and the preparation of short special papers by the students.

[Wednesday and Friday, 8.30 A. M.]

*67 *Elizabethan Drama.* 2 hrs.

The English drama, from the mystery plays to the closing of the theatres in 1642, studied from both the literary and the dramatic points of view. Plays of the pre-Elizabethan period are read and briefly discussed, with the object of getting a historical background. Some plays of all the principal dramatists from 1580 to 1640, except Shakespeare, will be read: Marlowe, Ben Jonson, Dekker, Heywood, Chapman, Middleton, Beaumont and Fletcher, Webster, Ford, Massinger, Shirley. As a rule, one play will be read for each lesson.

The method of instruction in this course will be by lectures. A weekly one-page critical theme will be required of each student in the class.

[Wednesday and Friday, 10.30 A. M.]

Professor CROSS :—

[68 *English Prose Fiction.* 1 hr.

The period covered by this course varies from year to year.
Omitted in 1904-1905.]

69 *Romantic Verse since 1850.* 1 hr.

This course deals mainly with the so-called Pre-Raphaelites, as Dante Gabriel Rossetti and William Morris. These and other poets are studied in connection with the medieval romances from which they drew. The work thus includes literary history and a study of sources.

[Tuesday, 2.00 P. M., 20 Sheffield Hall.]

Dr. OSGOOD :—

70 *Middle English Romances.*

1 hr.

A study of the various groups of romances upon the basis of Billings' *Guide to Middle English Metrical Romances*, supplemented in some cases by other outlines. The work will consist in part of the detailed study of two or three texts in the best editions, such as Hall's *King Horn*, Hausknecht's *Floris and Blanchefleur*, and Kölbing's *Amis and Amiloun* and *Sir Tristram*. This will be supplemented by more extended reading in the romances and elsewhere for the purpose of obtaining a general survey of the subject.

[Monday, 9.30 A. M.]

THE USE OF THE LIBRARY

Mr. KEOGH :—

71 *Bibliography.*

Ten lectures on certain practical aspects of bibliography. Discussion of general reference books; the means of finding what has been published on a subject; the reviewing of books; the classification and cataloguing of libraries; the taking and filing of notes and references; the compilation of bibliographies; the making of indexes; the printing of theses; the law of copyright.

VI. PHYSICAL AND NATURAL SCIENCE

ARTHUR W. WRIGHT, Ph.D.	SIDNEY I. SMITH, M.A.
ADDISON E. VERRILL, M.A.	CHARLES S. HASTINGS, Ph.D.
WILLIAM G. MIXTER, M.A.	RUSSELL H. CHITTENDEN, Ph.D., LL.D.
EDWARD S. DANA, Ph.D.	HORACE L. WELLS, M.A.
FRANK A. GOOCH, Ph.D.	LOUIS V. PIRSSON, M.A.
SAMUEL L. PENFIELD, M.A.	HENRY S. GRAVES, M.A.
HARRY B. FERRIS, M.D.	JAMES W. TOUMNEY, M.S.
PHILIP E. BROWNING, Ph.D.	ALEXANDER W. EVANS, M.D., Ph.D.
HENRY L. WHEELER, Ph.D.	LAFAYETTE B. MENDEL, Ph.D.
HERBERT E. GREGORY, Ph.D.	JOSEPH BARRELL, Ph.D.
WESLEY R. COE, Ph.D.	EDWARD A. BOWERS, B.A., LL.B.
WILLIAM J. COMSTOCK, Ph.B.	LEONARD M. TARR, M.A.
ISAAC K. PHELPS, Ph.D.	GEORGE F. EATON, Ph.D.
HARRY W. FOOTE, Ph.D.	HENRY H. ROBINSON, Ph.D.
LEO F. RETTGER, Ph.D.	ANDREW L. WINTON, Ph.B.
ARTHUR L. DEAN, Ph.D.	WILLIAM E. FORD, JR., Ph.D.
TREAT B. JOHNSON, Ph.D.	GEORGE S. JAMIESON, Ph.B.

The work in PHYSICS is carried on in the Sloane Physical Laboratory, and the Physical Laboratory of the Sheffield Scientific School in Winchester Hall :

The work in CHEMISTRY in the Sheffield Chemical Laboratory, and in the Kent Chemical Laboratory :

The work in MINERALOGY, PETROLOGY, GEOLOGY, PALEONTOLOGY, and ZOOLOGY in the Peabody Museum of Natural History and in the Kirtland Hall of the Sheffield Scientific School :

The work in PHYSIOLOGY and PHYSIOLOGICAL CHEMISTRY in the Sheffield Biological Laboratory:

The work in COMPARATIVE ANATOMY and GENERAL BIOLOGY in the Sheffield Biological Laboratory :

The work in BOTANY in the Eaton Herbarium, Sheffield Hall :

The work in FORESTRY in the Forest School.

The GEOLOGICAL CLUB is an association of the instructors and graduate students, for the purpose of encouraging the students to prepare papers, and aid in the discussion of current topics of interest in geological subjects.

The PHYSICS JOURNAL CLUB, open to graduate students in Physics, meets weekly for the review and discussion of the current literature in this department of study.

The PHYSICAL CLUB, organized for study, criticism and discussion, holds fortnightly meetings. Open to graduate and advanced students in Physics.

The KENT LABORATORY JOURNAL CLUB meets fortnightly for the review and discussion of current chemical literature.

The CHEMICAL CLUB, composed of instructors, graduate students, and others interested in chemistry, holds fortnightly meetings for the presentation and discussion of papers and reviews of recent work.

The BIOLOGICAL CLUB, composed of instructors, graduate students, and others interested in Biology, meets fortnightly for the presentation and discussion of papers and reviews of recent work.

PHYSICS

Professor A. W. WRIGHT :—

- 1 *Physics.* 4 hrs., to count as 2 hrs.

Chiefly practical work in the Sloane Physical Laboratory, with measurements, especially in heat, light, electricity, and magnetism, each exercise occupying two hours. As introductory to the laboratory practice, the exercises during a portion of the first term consist of recitations or discussions upon the theory and methods of physical measurements, the use of instruments, and other special topics. Laboratory facilities are also freely accorded to students of the course at other times than those of the stated exercises.

[Monday and Friday, or Tuesday and Thursday, 9.30-11.20 A. M., Sloane Laboratory.]

- 2 *Physics (Advanced Course).* 4 hrs., to count as 2 hrs.

Practical work in the Sloane Physical Laboratory, with instruction in the principles and methods of physical investigation, the processes and instruments of measurement, and the methods of computing and reducing results of observations. Special attention is paid to practical measurements in optics, electricity,

and magnetism. The student is expected to make original investigations an important part of his work, and has the free use of the laboratory facilities for carrying them on.

For those who have already pursued course 1 or its equivalent.

[Wednesday, 10.30 A. M.—12.30 P. M., and Thursday, 11.30 A. M., Sloane Laboratory.]

Professor HASTINGS :—

3 *Physics.* 3 hrs. lectures, 6 hrs. laboratory work.

Laboratory work in the Sheffield Physical Laboratory, supplemented by lectures on the theory of observation with the method of least squares, and on the theory of electricity and electrical instruments. The use of the laboratory is at the command of the student at all times.

[Lectures on Monday, Wednesday, and Friday, 12.00 M.]

Dr. L. P. WHEELER.

4. *Theory of Electrons.* 1 hr.

The lectures will treat (1) of the origin of the idea of the electron and the evidence for its existence ; (2) of the question of its material or electrical nature ; and (3) of that explanation of certain of the properties of matter and of the phenomena of electromagnetism which is based on the hypothesis of a sub-atomic structure of matter.

For courses in Mathematical Physics, see VII.

CHEMISTRY

(COURSES IN THE SHEFFIELD CHEMICAL LABORATORY)

The analytical laboratories of the Sheffield Scientific School are open to students in term time from 9 to 1 and from 2 to 5 o'clock, every week-day except Saturday. The greater part of the instruction is given in the laboratory to each student separately, but the various classes have, in addition, two or more lectures or recitations a week, in connection with the studies pursued in the laboratory.

Professors MIXTER and WELLS, Assistant Professors H. L. WHEELER and WALDEN, Messrs. COMSTOCK and WINTON, Doctors FOOTE and JOHNSON, and Mr. JAMIESON.

Professor MIXTER :—

5 *Chemical Physics.*

Especially the methods employed in the determination of molecular masses and specific heat.

Professor WELLS :—

6 *Qualitative Analysis.*

1st term.

Embraces a study of the commonly occurring elements in their qualitative relations, and includes a systematic course of analysis for the same. A good knowledge of elementary chemistry is a necessary preparation for this. If desired, the course is extended to include a study of many of the rare elements.

[Laboratory hours: Monday to Friday, 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M. Lectures and recitations: Monday and Tuesday, 3.00 P. M.,—occasionally at 12.00 M.]

7 *Quantitative Analysis.*

This is open only to those who have taken course 6 or its equivalent.

(a) *Gravimetric Analysis.* Second term. Embraces a series of exercises involving a considerable number of important methods.

(b) *Volumetric Analysis.* First term. This follows the gravimetric analysis. It includes the most important and typical methods.

(c) *Ultimate Organic Analysis.* First term.

8 *Inorganic Preparations.*

1st half of 2d term.

A course of laboratory work, with lectures and recitations. About thirty or forty compounds are prepared, which give a variety of important and instructive processes.

9 *Advanced Quantitative Analysis.*

(a) *Metallurgical Chemistry.* The analysis of ores, fuels, fluxes, alloys, metals, and other furnace products.

(b) *Mineralogical Chemistry.* The analysis of minerals for scientific purposes.

Laboratory hours, every week-day (except Saturday), 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M.

- 10 *Metallurgy and Assaying.* 2d half of 2d term.
A course of recitations and lectures on elementary metallurgy, followed by a short course of demonstrative lectures on gold and silver assaying, with the practical application of assaying to a few typical ores.
- 11 *Technical Gas-Analysis.* 2d half of 2d term.
A short practical course, including the principal methods.
- 12 *Investigations in Inorganic Chemistry.*
Opportunities are offered, to those who have had sufficient preparation, to make researches upon analytical methods, the preparation of chemical compounds, and other scientific problems.

Mr. COMSTOCK :—

- 13 *Elementary Organic Chemistry.* Both terms.
During the first four weeks of the second term the afternoon exercises are omitted and daily laboratory work substituted, 9.00 A. M. to 1.00 P. M., with occasional lectures at 12.00 M.
[Recitations supplemented by lectures, Thursday and Friday, 5 P. M.]
- 14 *Organic Chemistry.* 2 hrs. 1st term.
A continuation of the above course. Recitations and lectures.
[Monday and Tuesday, 5.00 P. M.]

Assistant Professor H. L. WHEELER and Dr. JOHNSON :—

- 15 *Advanced Organic Chemistry.*
This offers an opportunity for more extended study and original investigation to those who have proper preparation.
- 16 *Organic Preparations.* 2d half of 2d term.
Laboratory work, consisting of five exercises per week of about three hours each, in the preparation of such compounds as will give familiarity with the most important synthetical methods.

Mr. WINTON :—

- 17 *Proximate Organic Analysis.* 1st half of 2d term.
Lectures on the chemical composition of vegetable and animal substances (including foods) and laboratory practice in the detection and quantitative determination of the various constituents. The materials studied include cereal products, oil seeds, milk and its products, fats and oils, alcoholic liquors.

tea, coffee, spices, tannin products, etc. A special feature is the identification of vegetable materials by microscopical examination. This course is open only to those who have previously taken courses in qualitative and quantitative analysis. Some knowledge of botany and vegetable histology is also highly desirable.

18 *Advanced Proximate Organic Analysis.*

2d half of 2d term.

A continuation of the preceding course. Among the materials which may be studied are foods, wood products, textile fibers, dye stuffs, etc. Special attention is given to the detection of adulteration. The microscopical work includes a systematic study of various economic seeds, roots, leaves, barks, woods, etc., with special reference to their identification in powder form.

19 *Agricultural Chemical Analysis.*

Laboratory practice in the analysis of fertilizers, cattle foods, dairy products, insecticides, fungicides, and various other agricultural materials. Special attention will be given to the microscopic examination of cattle foods.

Dr. FOOTE:—

20 *Physical Chemistry.*

2d half of 2d term.

A course of lectures on the theory of Physical Chemistry, with special application to biology, one hour weekly.

[Monday, 5.00 P. M.]

21 *Physico-Chemical Measurements.*

2d term.

Laboratory practice in the more important methods of Physical Chemistry.

[Monday to Friday, inclusive, 9.30 A. M.—1.00 P. M.]

22 *Electro-Chemistry.*

2d term.

Experimental work in Electro-Chemistry, including the usual measurements, quantitative electro-analysis, and the synthesis of organic and inorganic compounds.

[Monday to Friday, inclusive, 9.30 A. M.—1.00 P. M.]

Mr. JAMIESON :—

23 *Sanitary Water-Analysis.*

1st half of 2d term.

A practical course in the chemical examination of drinking-waters. Two exercises of three hours each per week.

(COURSES IN THE KENT LABORATORY)

The Kent Laboratory is open from 9.00 A. M. to 1.00 P. M., and from 2.00 to 5.00 P. M. excepting Saturdays, to students who take strictly graduate courses.

Professor GOOCH, Assistant Professor BROWNING, Dr. PHELPS and Dr. VAN NAME :—

*24 *Inorganic Chemistry—Experimental and Descriptive.*

3 exercises—6 hrs.

Lectures, laboratory work, and class-room exercises. An introduction to elementary chemical theory, the use of symbols and equations, and the study of the elements and their compounds.

[I, Wednesday and Friday, 11.30 A. M.—1.20 P. M.; II, Tuesday and Thursday, 11.30 A. M.—1.20 P. M.; I, II, Monday, 11.30 A. M.—1.20 P. M.]

Assistant Professor BROWNING :—

*25 *Qualitative Analysis.*

3 exercises—5 hrs.

Laboratory practice in the ordinary processes of qualitative analysis, with lectures.

[Monday, 9.30–10.20 A. M.; Wednesday and Friday, 8.30–10.20 A. M.]

Professor GOOCH and Dr. PHELPS :—

*26 *Organic Chemistry.*

3 exercises—5 hrs.

An introduction to the study of the compounds of carbon. Lectures, written exercises, and laboratory work. Open to those who have completed course 25, or its equivalent.

[Monday, 10.30 A. M.—1.20 P. M., and Wednesday and Friday, 10.30–11.20 A. M.]

Professor GOOCH :—

*27 *Quantitative Analysis.*

2 exercises—6 hrs.

Lectures with laboratory practice in the use of the simpler methods of gravimetric quantitative analysis.

[Wednesday and Friday, 2.00–4.50 P. M.]

28 *Quantitative Analysis (second course).*

Practice in the more complex processes of gravimetric, volumetric, and electrolytic analysis.

[Hours for consultation fixed by appointment.]

29 *Chemical Theory.* 1 hr.

This course is devoted to the historical development of the general principles and modern theories of chemistry.

[Tuesday, 11.30 A. M.—12.20 P. M.]

30 *Special Methods.*

Laboratory practice in special methods of analysis and research.

[Hours for consultation fixed by appointment.]

31 *Original Work and Research in Inorganic Chemistry.*

(a) Special problems of *analysis*—either experimental criticism of known processes or constructive work looking towards the development of new methods.

(b) The critical examination of reactions.

[Hours for consultation fixed by appointment.]

Assistant Professor BROWNING :—

32 *Inorganic Preparations.* 2 hrs.

A short course, mainly laboratory work, covering typical methods for the preparation of inorganic salts.

[Tuesday, 3.00–4.50 P. M.]

33 *The Rare Elements.* 2 hrs.

Lectures with laboratory work covering the principal reactions of the elements not included in the general course. The methods in use for the qualitative determination of these elements are carefully studied, and a systematic arrangement developed so far as practicable.

[Monday, 3.00–4.50 P. M.]

Dr. PHELPS :—

34 *The Carbon Compounds—Descriptive and Theoretical.* 3 hrs.

A course of lectures treating systematically the more important compounds of carbon and the theories concerning them. An elementary knowledge of organic chemistry is desirable as a preparation.

[Monday, Wednesday and Friday, 8.30–9.20 A. M.]

35 *Organic Synthesis.*

Laboratory practice in synthetical processes too long or too complicated to be included in the experimental work of course 26.

[Hours for consultation fixed by appointment.]

Dr. VAN NAME :—

36 *Physical Chemistry.* 1 hr.

An elementary course of lectures covering the more important theories of physical chemistry, including electro-chemistry.

37 *Physico-Chemical Methods.* 4 hrs.

A laboratory course affording practice in a number of the typical processes and measurements of physical chemistry, including electro-chemistry.

MINERALOGY

Professor PENFIELD :—

38 *Determinative Mineralogy.* 3 hrs.

The object of this course is to gain familiarity with the common minerals together with facility in their identification. The subject is treated mainly from a chemical standpoint, and it is assumed that all who take the course have some familiarity with the principles of elementary chemistry. A portion of the time allotted to the course (about one quarter) is devoted to the study of simple chemical reactions performed both in the dry way with the aid of the blowpipe and in the wet way with reagents, and such tests are subsequently made the basis of the determination of mineral species. The mineralogical laboratory is open daily from 9-1 and (Saturdays excepted) from 2-5, and by devoting more than the allotted time to the subject the course may be extended to any desired extent.

[Wednesday, 2.00-5.00 P. M., or Saturday, 9.00 A. M.-12.00 M.]

39 *Crystallography and Descriptive Mineralogy.*

2 hrs. 1st half of 2d term, 3 hrs. 2d half of 2d term.

These two subjects are treated together, a group or class of crystals being first studied and then the mineral compounds belonging to that class. Instruction is given by means of lectures and practical demonstrations, the varieties of form and develop-

ment of crystals being illustrated by means of glass and wooden models and a collection of natural crystals, while in descriptive mineralogy specimens from the valuable and extensive Brush Collection are studied.

For the benefit of those who can devote but one hour a week to these subjects a course similar to the above, but necessarily abridged, is given each year, it being supposed that those who take the shortened course will be able to supplement it by reading and study so as to make it practically an equivalent to the longer one.

[Monday and Tuesday, 3.00-4.00 P. M., and during 2d half of 2d term, Saturday, 9.15-10.15 A. M. Abridged course, Wednesday, 5.00-6.00 P. M. throughout the year.]

40 *Experimental Work in Crystallography.* Daily.

The chief features of this course are the measurement of the angles of crystals with the reflection goniometer; the determination of symmetry; the plotting of the forms of crystals in the stereographic and linear projections; the calculation of axial ratios of crystals and of the symbols of their faces; and the drawing of crystal forms and combinations. For an elementary course, including a few examples in each of the six systems, a practical exercise (3 hrs.) once a week throughout the year is generally sufficient; the course may be lengthened and varied, however, to almost any desired extent. A knowledge of plane trigonometry is indispensable, and some experience in mechanical drawing is most desirable.

41 *Experimental Work in the Optical Properties of Crystals.* Daily.

In this course the optical properties of crystals are studied and determined. Students learn to use the refractometer, total reflectometer, polariscope, polarizing microscope, axial angle apparatus and other optical appliances. A knowledge of optics is indispensable.

42 *Original Investigation in Mineralogy and Crystallography.*

Those who are sufficiently advanced may undertake research work in mineralogy and crystallography. Such work may be along the lines of analytical chemistry for determining the composition of minerals, or the crystallographic and optical properties of minerals may be studied. Material for investigation is available from the Brush Collection and the University Mineral Cabinet.

Dr. FORD :—

- 43 *Ore Deposits.* 1 hr. 2d half of 2d term.

A short course of lectures of an elementary nature. Emphasis is laid on the principles of ore deposition and short descriptions are given of the typical and important ore deposits of North America. The course is illustrated by lantern slides and by specimens taken from the ore collection of the Sheffield Scientific School. A knowledge of elementary mineralogy and geology is desirable.

PETROLOGY

Professor PIRSSON :—

- 44 *Petrology.* Daily, 9 A. M. to 1 P. M.

(a) Study and determination of the rock-making minerals by optical and chemical methods. Includes the use of the petrological microscope.

(b) Characters, origin, and classification of rocks, commencing with igneous types and passing into the crystalline schists, during which metasomatic and dynamic changes, including effects of dynamo-metamorphism, are taken up. The work is carried on mostly in the laboratory, with access to collections both of rocks and thin sections.

(c) Original investigation. In sequence to (a) and (b) some special object or locality may be made the subject of investigation. The work requires laboratory methods of determination, both chemical and microscopical, with consultation of the literature and occasionally work in the field. A large amount of material is available in the petrologic collections of the Sheffield Scientific School.

Only those whose previous training in mineralogy and geology has been sufficient to enable them to pursue the subject advantageously are admitted to this course.

- 45 *Elementary Petrology.* 1 hr. 1st half of 2d term.

A series of lectures of an elementary nature, and without the use of the microscope, on the characters, origin, and classification of rocks with especial reference to their geologic relations and economic properties. Illustrated by diagrams, collections of specimens, etc.

[Hours to be arranged.]

GEOLOGY

Professor PIRSSON :—

*46 *Elementary Structural and Dynamical Geology.*

3 hrs. 1st half-year.

This course in Geology is given partly by lectures and partly by recitations with the use of a text-book. It includes the elements of structural and dynamical geology, and these subjects are illustrated by maps, diagrams, photographs, lantern views and specimens. The course is especially designed as an introduction to more extended geological studies.

Professor GREGORY and Assistant Professor BARRELL :—

*47 *General Geology.*

2 hrs.

A course of lectures on the general principles of the science of geology. Such topics will be discussed as will give an understanding of the structural features of the earth, of the forces by which its present condition has been attained, of the past history of the earth, including the evolution of living forms. The lectures will be supplemented by the use of a text-book and illustrated by specimens and lantern views. Optional excursions to points of geologic interest will be arranged.

Professors GREGORY and BARRELL and Dr. ROBINSON :—

*48 *Geology, with field and laboratory work.*

3 hrs.

This course will include the exercises of course 47, General Geology, and in addition field and laboratory work will be assigned to average two hours per week. The laboratory work will consist of the study of important minerals and fossils; the field work will include geologic mapping and excursions. [Students who take this course must leave Monday or Tuesday afternoon free from 2.00–5.00.]

Dr. H. H. ROBINSON :—

49 *Field Geology.*

6 hrs., to count as 3 hrs.

The course will consist of field work upon selected areas in the vicinity of New Haven, supplemented by lectures and laboratory exercises upon the construction and use of topographic and geologic maps.

Professor GREGORY :—

50 *Geology of Connecticut.*

A study of some problem connected with the physical geology of Connecticut. The work will be carried on in connection with the United States Geological Survey and in every case a written report will be required. This report may be presented as a thesis for an advanced degree.

*51 *Physiography.*

2 hrs

A study of the origin, development and classification of land forms followed by a study of the physiography of the United States. The exercises will include lectures, field excursions, the reading of topographic maps and of geologic literature.

52 *Physiography.*

The origin, development and classification of land forms, as illustrated by some area selected for special study.

Assistant Professor BARRELL :—

53 *Structural Geology.*

3 hrs.

An advanced course consisting of studies on the nature of chemical and dynamical agencies operating within the crust of the earth and their effects. Such subjects are taken up as: the causes and nature of weathering, lithification; of joints faults, folds, fissure veins, metamorphism and mountains. The exercises will consist of lectures, the study of geological literature and field and laboratory problems. [Students who take this course must leave Wednesday or Thursday afternoon free from 2.00–5.00, as these afternoons will occasionally be substituted for the regular class hour.]

54 *Dynamical and Structural Geology.*

A study of folds, faults, veins, metamorphism, mountain making, etc., for those who wish to specialize in geology. Problems for investigation will be assigned with a view toward the preparation of theses for advanced degrees. A knowledge of petrography is required.

Attention is called to the fact that field courses in Geology are offered by a number of universities for the summer of 1904, and that credit will be given by Yale University for such courses when satisfactorily completed.

In 1905 and thereafter Summer Courses will be offered also by Yale University.

A circular containing a description of the courses offered for the season of 1904 may be obtained from the Dean, and any further details may be obtained by addressing Dr. Gregory.

MR. TARR :—

55 *Meteorology.*

This course will include studies of the general circulation of the winds ; the development of storms ; storm tracks and their effect on climate ; thermodynamics of the atmosphere ; methods of forecasting the weather. The instruments, records and charts of the United States Weather Bureau office will be available for research work.

BIOLOGY

Professor VERRILL :—

56 *Zoology.*

Laboratory practice, recitations, readings, and lectures. The laboratory work is varied according to circumstances, in order to accommodate, as far as possible, those students who wish to pursue special branches. Most of the time is devoted to comparative anatomy, morphology, histology, and systematic zoology. Ample collections in the Peabody Museum, representing all classes of animals, are available for instruction, while the proximity to the sea makes it easy to provide fresh or living examples of most classes of marine animals for study and dissection.

Excursions may be arranged, when desirable, for the study of marine animals in their natural surroundings, on the adjacent sea coasts, and for making collections. Occasionally parties of advanced students have been taken to the coral-reefs of the Bermuda islands for these purposes. Extensive collections of insects are available for the study of Economic Entomology.

Professor S. I. SMITH and Assistant Professor COE :—

*57 *General Biology.* 3 hrs.

*58 *Comparative Anatomy and General Biology.* 6 hrs. 2d term.

59 *Comparative Anatomy and General Biology.*

Graduate students who have had sufficient elementary training are received in the Sheffield Biological Laboratory, and are provided with special advanced courses of instruction adapted as far as possible to the particular wants of the individual student. Such courses may cover either or both terms, and require at least three hours of laboratory work per day for two or more days each week. To such students the laboratory is open five days a week.

60 *Morphology and Embryology of Vertebrates.* 1st term.

A course of about twenty exercises of two hours each, consisting of lectures and demonstrations with laboratory work. The classification of vertebrate animals, and the comparative morphology of the different sets of organs in the various groups, is first discussed with special reference to human morphology. Then the development, fertilization and cleavage of the egg, and the formation of the germ layers, tissues and organs of the vertebrate body are taken up in order. The course may be supplemented, if desired, by more extended practical work in the laboratory.

Assistant Professor COE :—

61 *Biology of the Cell.*

A general course in Cytology, consisting of laboratory work supplemented by informal lectures, on the structure and manifestations of the animal cell, with special attention to maturation, fertilization, and cleavage of the ovum. The subject is treated with reference to its bearing on the problems connected with the phenomena of growth, heredity and evolution. The course will include the practical study of protoplasmic structure and movement, various types of cells with resting nuclei, cell-division, conjugation in unicellular animals, structure of sperm-ary and development of spermatozoa, ovary and development of the ovum, fertilization, parthenogenesis, types of cleavage, and formation of primary layers of the embryo. Considerable attention is given to the technique of the subject, and to experimental embryology.

62 *General Embryology.*

Laboratory work and informal lectures on the development of certain types of invertebrates, followed by a similar study of the elementary principles of vertebrate embryology.

In addition to the above, special courses may be arranged for either term to meet the requirements of individual students, and such courses may include a study of the later stages of the development of the embryo, with special reference to the vertebrates, and a practical study of the development of the chick.

Dr. EATON :—

63 *Comparative Osteology.* 2 hrs.

An elementary course especially designed as a preparation for the study of Vertebrate Paleontology. Laboratory work in which the most important types of the vertebrate skeleton are studied and compared. Hours will be arranged by the instructor upon consultation.

Professor FERRIS :—

64 *Comparative Morphology of the Vertebrate Brain.* 1 hr.

A course extending through the entire year, consisting principally of dissections and drawings, with some demonstrations and lectures, on the embryology and general morphology of the brain.

Professors CHITTENDEN and MENDEL :—

65 *Physiological Chemistry.*

Graduate students who have sufficient knowledge of analytical and organic chemistry and elementary physiology or general biology are received in the Sheffield Biological Laboratory at the beginning of the academic year, where they can pursue a course in physiological chemistry extending throughout the entire year. The course necessitates, on an average, four hours of laboratory work each day, and attendance at lectures and recitations three or four times each week.

Students who are desirous of studying any special subject in physiological chemistry and have but a limited amount of time are received also, provided they are qualified by previous work to pursue the study advantageously.

[Monday to Friday, inclusive, 9.00 A. M.—1.00 P. M.]

66 *Research Work in Physiological Chemistry.*

It is desired to make the laboratory useful to advanced students and other persons who have shown the necessary qualifications to undertake original investigations independently or

under guidance. To those suitably trained opportunity for undertaking research work will be given; and the facilities which the laboratory affords will be placed freely at their disposal. Investigations will be planned with reference to the needs and attainments of the individual. The department has a satisfactory equipment, and is ready to give encouragement to those who wish to become acquainted with the methods and aims of research. To those engaged in this work the laboratory is open during the entire day.

67 *Experimental Physiology.* 3 hrs.

Essentially a laboratory course intended to afford experimental acquaintance with certain departments of physiology, and giving particular attention to general physiological methods. The physiology of muscle and nerve, of the circulation, secretion, etc., is considered in some detail. Other departments are treated in a more elementary manner; a brief survey of the entire field is thus afforded, while certain topics are studied with sufficient thoroughness to give training in technique and methods of demonstration, and an appreciation of the aims and methods of research. Opportunity is also afforded for more advanced work in certain lines of experimental physiology.

[Saturday, 9.00 A. M.—1.00 P. M.]

68 *Physiological Seminary.* 2 hrs. both terms.

A study of the recent advances in physiology and physiological chemistry is undertaken. The investigations which have led to the establishment of important facts are presented; and informal talks are given on the bearing which recent discoveries in physiology have on existing views. The participants are required to prepare reports and reviews of papers appearing in the current German, French, and English physiological literature. For this work the library facilities of the University are satisfactory.

[Wednesday, 4.00—6.00 P. M.]

Professor CHITTENDEN :—

69 *Experimental Toxicology.* 2d half 2d term.

A course of about twenty lectures, with demonstrations on the physiological action of the more important mineral and alkaloidal poisons. This course can be supplemented, if desired, by laboratory work on the chemical reactions of poisons, with a study of the methods of detecting and separating poisons.

[Tuesday, Thursday, and Saturday, 8.15 A. M.]

*70 *Physiology.* 1 hr.

Huxley's *Lessons in Elementary Physiology*, with occasional lectures and illustrative experiments.

[Wednesday, 2.00 P. M., S. L.]

*71 *Physiological Chemistry.* (Shorter course.) 2½ hrs.

Two exercises a week, of a minimum of two and a half hours each, in the laboratory of physiological chemistry. The time is devoted mainly to a study of the chemistry of the connective, contractile, and nervous tissues, of the chemical processes of salivary, gastric, and pancreatic digestions, and so far as the time allows, of other subjects connected with the physiology of nutrition and the chemistry of the excretions.

A laboratory fee is charged for this course. The student in addition must bear the expense of gas, flask, etc., which should not exceed ten dollars.

72 *Physiology of Nutrition.* 3 hrs. 1st half 2d term.

Dr. L. F. RETTGER:—

73 *Bacteriology and Hygiene.* 4 hrs.

A general course in bacteriology and hygiene adapted to those who have had sufficient training in elementary chemistry and general biology. Essentially a laboratory course supplemented by lectures and recitations.—Practical instruction is given in the methods of preparing culture media and in the isolation and identification of the different species of bacteria coming under observation. Considerable time is devoted to the study of pathogenic organisms in their relation to disease. The bactericidal action of various antiseptics and disinfectants on a number of pathogenic organisms, is given as much attention as time permits. Opportunities are offered for the study of problems in bacteriology and hygiene which are of special interest to the student of biology. Such problems may be taken up as subjects for a thesis or in connection with work carried on in other departments of the university.

Assistant Professor EVANS:—

*74 *Elementary Botany.* 4 hrs.

An elementary course in the botany of flowering plants. Laboratory work and informal lectures. The plant and its vari-

ous organs are studied with respect to their form, structure, and functions, and special emphasis is laid on the relationships of a plant to its environment.

[Monday and Wednesday, 9.30–11.20 A. M.]

75 *General Morphology of Plants.* 4 hrs.

Laboratory work and informal lectures. Beginning with the simplest forms, the various groups of plants are taken up in suitable types, and their structure, development, and mode of life are studied and compared. The course is limited to those who show a satisfactory knowledge of the botany of flowering plants.

[Wednesday and Friday, 3.00 P. M.]

76 *Advanced Morphology and Taxonomy of Plants.*

The botanical laboratory is open throughout the year to graduate students, properly qualified, who may wish to pursue advanced studies along some special line in morphological or taxonomic botany. The instruction will be adapted as far as possible to the needs of the individual student.

Dr. DEAN :—

77 *Plant Physiology.*

Opportunity for study in plant physiology is offered to graduate students who have a knowledge of plant morphology and histology. Familiarity with the elements of physics and chemistry is presupposed. Attention is especially directed to the chemical features of vegetable physiology, including the study of the composition of the plant body, plant nutrition, the synthesis of proteids and carbohydrates, the distribution, action, and significance of enzymes, and other features of plant metabolism.

The laboratory will be open for work from 9 A. M. to 1 P. M.

FORESTRY

The following courses given in connection with THE FOREST SCHOOL are open to graduate students.

Professor TOUMEY and Assistants :—

78 *Forest Botany.*

The instruction in Forest Botany includes informal lectures, laboratory and field work. It is expected that the student taking this course has a general knowledge of the science of Botany.

hence the work in Forest Botany may be termed Special Botany, dealing particularly with indigenous trees and shrubs, and herbaceous plants which grow in forests. The course embraces Morphology of Plant Organs, with special attention given to them in their winter condition; Anatomy and Histology, with special attention given to the origin and development of the tissues of woody plants; Physiology, including Ecology and Physiology proper, with particular attention given to environmental factors influencing the growth of woody plants and forest herbs; and Taxonomy, with special attention given to identification and classification of the trees and shrubs, and the forest herbs indigenous about New Haven. The work in Ecology and Taxonomy is largely based upon field work, weekly excursions being given throughout the year, except in midwinter.

Professor BREWER:—

79 *Meteorology and Forest Physiography.* 4 hrs. 1st half 2d term.

General conditions necessary to forests; elementary meteorology; forests as related to temperature and its range; to rainfall and its range; to excesses of weather and climate; to the mechanical and chemical nature of soil and ground-water; to the geological character of the surface; to the relief-forms of the land; to other geographical features; the geographical distribution of forests: the aspects of forests as related to climate and topography; the geological history of forests; forests in relation to public health, and the relations of forest physiography to history and civilization.

Mr. BOWERS:—

80 *Forest Administration and Law.*

The development of the public domain with reference to the creation of a forest policy by the United States and a consideration of laws relating thereto, including rules and regulations governing public lands, forest reserves and national parks.

Special consideration of the laws and decisions of the Federal and State Courts with reference to timber trespass, river driving, riparian rights, damages resulting from forest fires, etc.

Professor GRAVES:—

81 *History of Forestry.* 2 hrs. 1st half 2d term.

Rise of Forestry abroad and in the United States. Present practice of Forestry in foreign countries.

VII. MATHEMATICS

EUGENE L. RICHARDS, M.A.	CHARLES B. RICHARDS, M.A.
WILLIAM BEEBE, M.A.	A. JAY DUBOIS, Ph.D.
ANDREW W. PHILLIPS, Ph.D.	JAMES PIERPONT, Ph.D.
PERCEY F. SMITH, Ph.D.	SAMUEL E. BARNEY, C.E.
HENRY A. BUMSTEAD, Ph.D.	WILLIAM A. GRANVILLE, Ph.D.
HERBERT E. HAWKES, Ph.D.	EDWIN B. WILSON, Ph.D.
ARTHUR S. GALE, Ph.D.	MAX MASON, Ph.D.
EDWY L. TAYLOR, Ph.B.	

Connected with the department are the Seminary rooms, the Mathematical Laboratory, the Collection of Models, the Mathematical Club, the Engineers' Club.

The SEMINARY ROOMS, which are at 90 High street, may be used by all students in mathematics. The seminary rooms afford a place for students to meet for the discussion of mathematical questions, and study. There is a good departmental reference library, and also a collection of drawings and models made by students of previous years illustrating various theories. Many of the lectures in this department of past years have been reported and are here to be found bound and ready for consultation.

The MATHEMATICAL LABORATORY occupies a commodious room on the floor below the seminary rooms. It is well equipped with tools and drawing instruments necessary to construct mathematical models. Students are given direction and advice for the proper and expeditious construction of models more or less elaborate, illustrating the subjects they are studying. Such models and drawings serve to develop the student's geometrical intuition as well as to make more clear the particular theory in hand. Students who expect to become teachers will find the laboratory most useful in acquiring facility in preparing simple models to illustrate subjects they may later have to teach.

The COLLECTION OF MATHEMATICAL MODELS is one of the most extensive in the country, and is constantly growing. Besides a very complete selection of plaster and thread models from Brill and Schilling, etc., the collection contains a large number of models illustrating the teaching of solid geometry, the theory of equations, and various kinematical principles, as well as the theory of twisted curves and surfaces which have been made under the direction of instructors of the department.

The MATHEMATICAL CLUB holds fortnightly meetings, at which are presented summaries of articles in current periodicals and recent works on pure and applied mathematics, descriptions and models of new apparatus, also papers containing the results of the original investigations of the instructors and advanced students in this department. All students are encouraged to prepare papers which, while not original, give a comprehensive survey of some field of mathematics, or treat from a new standpoint some question of general interest to the members of the club.

The ENGINEERS' CLUB meets monthly in North Sheffield Hall for the reading and discussion of papers on subjects relating to the different branches of engineering.

Lectures are occasionally given before the club by professional experts.

Professor BEEBE :—

[I *Celestial Mechanics.*

2 hrs.

Development of formulae and numerical calculations for determining parabolic and elliptic orbits from three observations.

Computation of an ephemeris and reduction of observations for comparison with the ephemeris.

The course may be carried on through a second year to the discussion of perturbations.

Omitted in 1904-1905.]

Professor PIERPONT:—

2 *Projective Geometry.* 3 hrs.

Both the analytic and synthetic methods will be used to develop the fundamental properties of points, lines, planes, conics and quadric surfaces, and the linear transformation in the plane and in space.

[Monday, Tuesday and Wednesday, 5.00 P. M.]

3 *Theory of Functions of a Complex Variable.* 3 hrs.

The subject will be treated from the standpoint of Cauchy and Riemann. After the general theory has been developed, a rapid survey will be taken of certain special functions, as the elliptic, Bessel's and modular functions.

[Tuesday and Wednesday, 4.00 P. M.; Thursday, 3.00 P. M.]

4 *Theory of Numbers.* 3 hrs.

The first part of the course will deal with certain parts of the old classical theory, such as quadratic residues and quadratic forms. The latter part of the course will take up the theory of algebraic numerical bodies, especial attention being given to cyclotomic bodies.

[Monday, 4.00 P. M.; Thursday, 2.00 P. M.; Friday, 5.00 P. M.]

Professor P. F. SMITH:—

5 *Advanced Differential Geometry.* 3 hrs.

This course will acquaint the student with the results of modern research along the lines indicated by the title. A thorough and comprehensive first course is assumed.

Assistant Professor BUMSTEAD:—

[6 *Problems in Mathematical Physics.* 2 hrs

The application of the general equations of physics to the solution of definite problems possessing theoretical or experimental interest. Certain portions of the following subjects will be taken up: Fourier's theory of heat conduction together with problems in other departments of physics which are treated in a similar manner; distributions of potential involving the use of conjugate functions, spherical harmonies and Bessel's functions.

Omitted in 1904-1905.]

Dr. W. A. GRANVILLE :—

7 *Analytic Geometry.* 3 hrs.

An intermediate course, based upon the usual first year's work in this subject and the Calculus.

Books of reference : Niewenglowski, *Cours de géométrie analytique* ; Salmon, *Higher Plane Curves and Geometry of Three Dimensions* ; Clebsch-Lindemann, *Vorlesungen über Geometrie*.

Assistant Professor HAWKES :—

*8 *Geometry.* 2 hrs.

This course is intended to give the student an adequate equipment for the teaching of elementary geometry. The course will include a study of the nature of geometric proof, the significance and dependence of axioms, and the relation between arithmetic and geometry.

[Tuesday and Thursday, 10.30 A. M.]

9 *Determinants and Invariants* 2 hrs.

The first part of the course will develop the theory of determinants from Kronecker's point of view and will include the theory of elementary divisors. The second part will be devoted to the theory of invariants, particularly those belonging to binary and ternary forms with constant attention to the geometrical interpretation.

Dr. WILSON :—

10 *Advanced Calculus.* 2 hrs.

This course is intended to equip the student with an extended and practical formal knowledge of calculus, such as is of great use in pure mathematics and indispensable in the applications. The subjects treated are : Partial differentiation and change of variable, series with especial reference to their use in approximating to constants and functions, the simpler total and partial differential equations, definite integrals and the methods of transforming and computing them, the Beta and Gamma and other simpler functions defined by definite integrals, Fourier's series, and the elementary necessary conditions of the calculus of variations.

[Tuesday and Thursday, 8.30 A. M.]

11 *Introduction to Mathematical Physics.* 2 hrs.

This course is intended to meet the needs of students of physics, engineering, theoretical chemistry, and to afford the student of pure mathematics an insight into the simpler applications. It is proposed to discuss the elements of the kinetic theory of gases, of thermodynamics, of vector fields, of electricity and magnetism, with especial reference to electromagnetic phenomena, and of elasticity. Students who are not especially qualified by advanced experimental work in some field of science are expected to have taken Mechanics and it is advisable to be taking Advanced Calculus. It is recommended that students own a copy of Gibbs's *Vector Analysis*.

[Tuesday and Thursday, 2.00 P. M., Sloane Laboratory.]

12 *Electro-magnetic Theory of Light.* 2 hrs.

This course commences with the general theory of harmonic motion and its representation by complex scalar and vector quantities. The laws of electrodynamics are then applied to the phenomena of the propagation of light in isotropic and anisotropic media, and its reflection at a surface between two such media, including the case of an absorbent medium, and the dispersion of colors.

As the course is strictly theoretical and mathematical in its nature, the student is strongly advised to own some book giving a detailed treatment of light from the experimental standpoint. For this purpose Preston's *Theory of Light* is recommended.

Books of reference: Drude's *Theory of Optics*; Boussinesq's *Théorie de la Chaleur*; Mascart's *Traité d'Optique*; Helmholtz's *Electromagnetische Theorie des Lichtes*; Larmor's *Aether and Matter*; and Gibbs's *Vector Analysis*.

Dr. GALE :—

13 *Analytical Mechanics.* 2 hrs.

In this course the student applies his knowledge of the Calculus to the solution of problems on motion and equilibrium of a point, and the uniplanar motion and equilibrium of a rigid body. The course is intended especially for students who contemplate the study of engineering or physics. Instruction will be given by means of text-books.

[Monday and Friday, 11.30 A. M.]

14 *Differential Equations.* 2 hrs.

The object of the course is to give a general survey of the subjects of ordinary and partial differential equations. Particular stress will be laid on the technique of the subject and a great variety of problems drawn from geometry, mechanics, and physics will be considered. The course is therefore of importance for students of the various branches of applied mathematics. Attention will be called to some of the problems arising in the modern theories of differential equations, and portions of Lie's work may be considered at some length.

[Tuesday and Thursday, 10.30 A. M.]

Dr. MASON :—

15 *Calculus of Variations.* 3 hrs.

A course in the modern theory of Calculus of Variations, including the method of Hilbert and a study of the Principle of Dirichlet, together with the classical theory, and illustrated by the discussion of problems from geometry, analysis and mechanics.

Books of reference : Moigno-Lindelöf, *Calcul des variations* ; Pascal, *Die Variationsrechnung* ; Kneser, *Lehrbuch der Variationsrechnung*.

————— :—

16 *Ordinary Differential Equations.* 3 hrs.

An advanced course, based upon a first course in the theory of functions.

Mr. E. L. TAYLOR :—

17 *Scientific Computation.* 2 hrs.

A discussion of the theory and methods of numerical calculation, illustrated by the use of various calculating machines in the possession of the University,

Books of reference : Bruns, *Grundlinien des wissenschaftlichen Rechnens* ; Lüroth, *Vorlesungen über numerisches Rechnen*.

Professor C. B. RICHARDS :—

MECHANICAL ENGINEERING.

This course, arranged for candidates for the degree of Mechanical Engineer, is open also to special graduate students, who are allowed in certain cases to take selected parts. The leading topics are :

18 *Applied Mechanics.*

Including graphical methods in applied kinematics, and in the investigation of mechanisms working with friction ; graphical determinations of the accelerations of the moving parts of machines ; the strength of materials as affecting the proportions of machine elements ; the applications of the principles of hydraulics to the construction and working of turbines and pumps.

19 *Thermodynamics.*

Applications to the compound steam-engine, air compressors and compressed air motors, engines worked by volatile vapors, refrigerating machines, the warming and ventilation of buildings.

20 *Machine-Design.*

In this course the student is engaged in practical exercises under the guidance of the professor in charge, investigating machinery, the designing and making of working-drawings, specifications, and estimates for machines and manufacturing plant. In addition to the study of machines in general, one of the following subjects (at the option of the student) receives particular attention : (a) Marine engineering ; (b) Railway machinery ; (c) Pumping machinery and plant ; (d) Machinery and plant for manufacturing. The student is required to make complete drawings, from new designs, of at least one important piece of machinery under one of these subjects. A compound marine engine and boilers, a locomotive, a turbine driving a centrifugal pump, a blowing-engine for an iron furnace, are examples.

Candidates for the degree of Mechanical Engineer are required to take also a course in mathematics, to sustain a final examination, and to present a satisfactory thesis on a subject approved by the professor in charge of the course.

Professor DuBois :—

CIVIL ENGINEERING.

This course offers instruction for advanced graduate students as well as for those students who are regular candidates for the degree of Civil Engineer. It embraces the following topics :

- 21 *Mechanics of Engineering.* 3 hrs.
Including the application of kinematics, statics, and kinetics to engineering problems.

- 22 *Construction and Design.* 3 hrs.
Including the strength and properties of materials, construction and design of bridges, roofs, foundations, retaining walls, dams and embankments, masonry arches, sewerage and drainage, improvement of rivers and harbors, specifications and contracts, and the preparation of designs and working-drawings.

Candidates for the degree of Civil Engineer are required to take, in addition, a selected course in mathematics and practical astronomy, and when the facilities in the physical laboratory permit, a course of laboratory work under the superintendence of the professors in charge. They are also required to sustain a final examination, and to present a satisfactory thesis upon a subject approved by the professor in charge of the course.

To special students, not candidates for the degree of Civil Engineer, a selection of special topics is allowed.

Assistant Professor BARNEY :—

- 23 *Geodesy and Practical Astronomy.* 2d term.
Methods of observation, based on measurements, triangulation field-work ; theory of least squares, adjustment of observations, and computation of geodetic latitudes, longitudes, and azimuth. The study of practical astronomy embraces the use of the sextant and engineer's transit with solar attachment for determining time, latitude, azimuth, and needle variation.

- 24 *Railway Surveying.* Three weeks in June and July.
A preliminary line for a railroad is run out, and from the contour map so obtained a final line is located, staked out, and cross-sectioned, and estimates are made for construction. The field-work begins the 20th of June and occupies the entire time for three weeks.

- 25 *Sanitary Engineering.*

- a. *Water Supply.* 1st term.
Methods of collecting and distributing water. Designing of reservoirs, pipe systems, and filtration plants.

- b. *Sewer Systems.* 2d term.
Design and construction of sewer systems, sewage disposal plants, etc.

VIII. THE FINE ARTS

JOHN F. WEIR, N.A., M.A. JOHN H. NIEMEYER, M.A., S.A.A.

Professor WEIR :—

1 *Technical Course in Painting.*

Only those students who have been qualified by a course in drawing can enter the course in painting. The hours for students of the Graduate School must be determined individually. The charge for instruction, entitling the student to all the privileges of the School, is \$25 for the college year.

2 *Course in Modeling.*

The course consists in modeling from the antique and from the living figure and is supplemented by the lectures given in course 1.

Professor NIEMEYER :—

4 *Course in Drawing.*

Students in the Graduate School may pursue the course in drawing in the Art School without restriction as to time. The charge for instruction is \$25 for the college year, entitling the students to all the privileges of the School as arranged for students from other departments of the University.

IX. MUSIC

HORATIO W. PARKER, Mus.D. SAMUEL S. SANFORD, M.A.
HARRY B. JEPSON, B.A., Mus.B. ISIDOR TROOSTWYK,
H. STANLEY KNIGHT, DAVID STANLEY SMITH, B.A., Mus.B.
WILLIAM EDWIN HAESCHE, Mus.B.

MR. DAVID STANLEY SMITH:—

1 *Harmony.* 2 hrs.

The study of chords, their construction, relations and progressions. This course covers the following subjects:

Intervals, triads, seventh chords, modulations, chromatically altered chords, suspension, organ point, passing and changing notes.

Figured bass is used only as a means of designating chords. Attention is turned at once to the harmonizing of melodies.

The original principles from which rules are derived are discussed and students are encouraged to exercise and cultivate their own judgment in the application of these principles.

Particular attention is given to the natural melodic and harmonic tendencies of tones and intervals. The subject of modulation is treated with special care and at length. Exercises are corrected in the class-room with explanations and illustrations.

G. W. Chadwick's *Harmony* is used as text-book.

[Tuesday and Thursday, 4.00 P. M.]

2 *Counterpoint.*

A thorough knowledge of Harmony is required of students in this course.

The work is the harmonizing and supplying melodious additional voices to choral and other melodies used as *Canti Firmi*.

The different orders of Counterpoint in two, three, and four voices; also double counterpoint, and more or less free imitative writing.

Students in this course are encouraged to try the simpler forms of free composition. No text-book is used.

[Tuesday and Thursday, 3.00 P. M.]

Professor PARKER :—

3 *The History of Music.*

Lectures on the development of music from its earliest stages ; history of Church Music from the time of Gregory ; history of Opera and Oratorio ; biographical sketches of famous composers, with description and analysis of their principal works ; history of purely instrumental music, showing the growth and development of musical forms up to their culmination in Beethoven.

Practical illustrations of the lectures on musical forms are given in the class-room.

The Evolution of the Art of Music, by Sir C. Hubert H. Parry is used as a text-book.

[Wednesday, 5.00 P. M.]

4 *Strict Composition.*

The more severe kinds of composition form the basis of work in this course.

Harmony in Five and more parts ; Threefold and Fourfold Counterpoint ; Four- and Three-part Fugues for voices or for instruments ; Canons of various kinds, with or without accompaniment of free voices ; Free treatment of different kinds of thematic material.

This course is preparatory to course 6. No text book is used.

[Tuesday and Thursday, 2.00 P. M.]

Mr. WM. EDWIN HAESCHE :—

5 *Instrumentation.*

2 hrs.

This course is open only to students who have done the work of courses 1 and 2, and it is strongly recommended that course 4 also should precede it.

Lectures are given on the nature, compass, tone-color, and other characteristics of all the instruments of the modern orchestra, with illustrations of their use by great composers.

Exercises in the practical orchestration of short pieces from the works of classic and modern composers, in analyzing, reading and playing from orchestral scores, beginning with Haydn and Mozart Symphonies, and embracing modern works of various kinds.

[Wednesday and Friday, 3.00 P. M.]

Professor PARKER :—

6 *Free Composition.*

This course is open only to students who have done the work of courses 1, 2 and 4, and have shown unmistakable talent for original composition. Several of the smaller forms of free instrumental and vocal music are composed by the students, and studies are made for larger compositions, which are finished in case the thematic material offered is of sufficient merit.

At the close of the year the student is required to produce an extended work, probably in sonata form.

[Wednesday and Friday, 2.00 P. M.]

Professor SANFORD, Assistant Professors JEPSON,
TROOSTWYK, and KNIGHT :—

7 *Practical Music.*

Instruction is given in Piano-, Organ-, and Violin-playing to a limited number of students. Fees range from \$50.00 to \$150.00 for the college year.

Each student of the piano-forte receives individual instruction, under the supervision of Professor Sanford, who will in person instruct a limited number of advanced students in the higher branches of the art, particularly in *ensemble* and concert-playing.

No student is admitted to a course in practical music who has not been admitted to one of the theoretical courses.

Students of organ-playing receive personal instruction from Assistant Professor Jepson, and of violin-playing from Assistant Professor Troostwyk.

X. PHYSICAL EDUCATION

WILLIAM G. ANDERSON, M.A., M.D. WILLIAM H. CALLAHAN, M.D.

Dr. ANDERSON and Dr. CALLAHAN :—

Physiology and Gymnastics.

2 hrs.

This course is designed for those who intend to teach gymnastics or to direct departments of physical education in institutions of learning, and for those who wish to take a more complete course of training for self-improvement than is offered in Freshman year. The work comes under two general branches as follows :

(1) *Principles and Practice of Gymnastics.*

Hour to be arranged.

Under this head will be discussed by Dr. Anderson (a) the scientific basis of physical training ; (b) history of gymnastics and growth of the various systems ; (c) means employed, such as apparatus and appliances ; (d) physical examinations and measurements ; (e) pedagogy of gymnastics. Required text-books : Anderson's *Gymnastic Terminology and Methods of Teaching Gymnastics*.

Members of the class will be called upon to arrange exercises for other classes, to classify movements for overcoming common physical defects, and to do practice work in teaching gymnastics.

(2) *Anthropometry, Applied Physiology and Hygiene.* 1 hr.

During the first term the subjects of respiration, circulation, digestion and the central nervous system will be considered in their physiological relations to physical activity and development.

The work of the second term will be devoted to lectures and quizzes on hygiene and personal sanitation.

The subjects of the third term will be anthropometry and general physical examinations. Members of the class will measure and prescribe exercises, and be taught to apply the principles taught during the early part of the year.

Text-books used : Seaver's *Anthropometry*; Huxley's *Physiology*.

UNIVERSITY PRIVILEGES

CLUBS FOR RESEARCH

In various voluntary associations, instructors and students meet periodically for the reading of papers, oral discussions, etc.; such are :

- The CLASSICAL CLUB.
- The MATHEMATICAL CLUB.
- The POLITICAL SCIENCE CLUB.
- The PHILOSOPHICAL CLUB.
- The SEMITIC AND BIBLICAL CLUB.
- The BIBLICAL RESEARCH CLUB.
- The MODERN LANGUAGE CLUB.
- The GERMAN JOURNAL CLUB.
- The ROMANCE JOURNAL CLUB.
- The ENGLISH CLUB.
- The PHYSICS JOURNAL CLUB.
- The ENGINEERS' CLUB.
- The CHEMICAL CLUB.
- The HISTORICAL CLUB.
- The PHYSICAL CLUB.
- The GEOLOGICAL CLUB.
- The BIOLOGICAL CLUB.
- The KENT LABORATORY JOURNAL CLUB.
- The ANTHROPOLOGY CLUB.

LIBRARIES AND READING-ROOMS

Students have the free use of all the Libraries of the University. The whole number of volumes in the several libraries of the University is more than 360,000.

The UNIVERSITY LIBRARY contains about 280,000 volumes, and many thousands of unbound pamphlets. Its READING-ROOM contains the books most important for daily consultation and reference, together with scholarly

periodicals, and is open on every week-day from 9 o'clock A. M., for twelve hours. Of current periodical publications, including publications of learned societies, the Library receives an unusually large number,—the foreign serials alone being not less than five hundred.

The LINONIAN AND BROTHERS LIBRARY, occupying the south wing of the old Library building, contains about 23,500 volumes of the best current literature. It is open from 9 A. M. to 5 P. M.

The COLLEGE READING-ROOM receives fifty-six daily newspapers, American and foreign, fifty-four weeklies and sixty-six other periodicals,—in addition to the periodicals received at the University Library.

The SHEFFIELD SCIENTIFIC SCHOOL LIBRARY is a valuable collection of 7,500 volumes, chiefly mathematical.

The ART SCHOOL LIBRARY contains about 500 volumes of expensive illustrated works.

The TROWBRIDGE REFERENCE LIBRARY in the Divinity School contains 4,000 volumes of works of reference for Biblical study.

The LOWELL MASON LIBRARY in West Divinity Hall contains 4,000 volumes of music.

The Peabody Museum, the Observatory, and the several Laboratories have valuable technical libraries.

The Library of the AMERICAN ORIENTAL SOCIETY, consisting of about 6000 books and manuscripts, is deposited in the University Library building.

Several of the departments of study (the Classical, English, Germanic, Mathematical, Philosophical, Political Science, and Historical) have special libraries of standard works for the use of advanced students.

For a Course of Lectures on the USE OF THE LIBRARY, see page 97.

LABORATORIES, MUSEUMS, AND COLLECTIONS

The Peabody Museum of Natural History.

The Physical, the Chemical, the Biological, and the Engineering Laboratories, and the Eaton Herbarium, of the Sheffield Scientific School.

The Sloane Physical, the Kent Chemical, and the Psychological Laboratories of Yale College.

The collections of the School of Fine Arts.

The collection of coins in the University Library, and various collections of models, casts, and photographs used in the teaching of mathematics and in other departments of instruction.

LECTURES AND CONCERTS

The following courses of public lectures and concerts are open to the students of the University :

The SHEFFIELD LECTURES.

The ART SCHOOL LECTURES, including the Trowbridge Lectures on Art.

The LYMAN BEECHER LECTURES ON PREACHING.

The AMERICAN LECTURES ON THE HISTORY OF RELIGIONS.

The DODGE LECTURES ON THE RESPONSIBILITIES OF CITIZENSHIP.

The BROMLEY LECTURES ON JOURNALISM, LITERATURE, AND PUBLIC AFFAIRS.

The YALE PUBLIC LECTURES.

The DWIGHT HALL LECTURES.

The SYMPHONY ORCHESTRA CONCERTS : six concerts by the New Haven Symphony Orchestra under the direction of Professor Parker.

The UNIVERSITY CHAMBER CONCERTS : four concerts by the Kneisel Quartet of Boston.

(For admission to the above mentioned concerts, the Yale Public Lectures and the Sheffield Lectures, a small fee is charged.)

ORGAN RECITALS: by Professor Jepson in Woolsey Hall on Monday afternoons in the Winter term.

Other public lectures are arranged for by the Phi Beta Kappa Society, the Medical Alumni, the Kent Club of the Law School, the Leonard Bacon Club of the Theological School, and other university organizations.

THE UNIVERSITY CHURCH

The privileges of THE CHURCH OF CHRIST IN YALE UNIVERSITY are extended to all students of the University.

PUBLIC WORSHIP is held in the BATTELL CHAPEL every Sunday morning at 10.30 o'clock.

YOUNG MEN'S CHRISTIAN ASSOCIATION

THE YOUNG MEN'S CHRISTIAN ASSOCIATION OF YALE UNIVERSITY is composed of six independently organized Associations in the Academic, Scientific, Graduate, Theological, Law, and Medical Departments of the University. The headquarters of the Association in the Graduate School are in Dwight Hall, on the College Square, which is admirably adapted to be a center of social religious life. The building contains a convenient reading-room, a carefully selected library, an auditorium for general religious services, separate rooms for the Bible classes and prayer meetings.

The activities of the Association in the Graduate School include aid for new students in securing board and rooms, a social reception in the early autumn, and informal social gatherings on Saturday evenings throughout the year, a Bible class on Sunday noons, and practical Christian work in the missions, Sunday schools, and Boys' Clubs which are controlled by the University.

READING ROOM FOR WOMEN STUDENTS

A reading room at 135 Elm street, in charge of the WOMAN'S GRADUATE CLUB, is open to all women studying in the University.

On September 29 to October 2, a member of the Club will be at 135 Elm street from 11.00 A. M. to 1.00 P. M. and from 3.00 to 5.00 P. M., for the purpose of rendering any possible service to the new students.

THE INFIRMARY

The YALE INFIRMARY is situated on Prospect street in a healthful and beautiful part of the city. It was built in 1892 at a cost of about \$40,000. One dollar is charged on the Treasurer's bill for each day that a student remains in the Infirmary. A competent matron is in residence, but the choice of physician rests with the patient.

THE GYMNASIUM

The GYMNASIUM is designed to provide all students of the University, not only with opportunities for general exercise, but also with the means of caring for the body in accordance with the laws of hygiene. It also provides for specific training in view of any physical defects that may be remedied by rational superintendence.

The Department is under the supervision of a Director, assisted by two Associate Directors, both of whom are trained physicians.

THE DINING HALL

The UNIVERSITY COMMONS, in University Hall, furnishes board at cost (approximating \$4.25 per week). The Hall contains seats for 1,008, and is open to the officers and students of the University. Application for board should be made at the office of the superintendent, Captain S. A. Smoke, at the east end of University Hall.

GRADUATE SCHOOL

LIST OF STUDENTS

IN ATTENDANCE 1903-1904

WITH THEIR MAJOR SUBJECTS OF STUDY

[The major subject of study is stated in each case. Students marked "A." are pursuing courses of study in absence under the direction of the Faculty for the degree of Master of Arts, Mechanical Engineer, or Civil Engineer.]

Anna Heloise Abel, B.A. Kansas University 1898, M.A. 1900	Salina, Kans. History	131 Dwight st.
Arthur Adams, B.A. Rutgers College 1902, M.A. Yale University 1903	Ocean City, N. J. English	103 Park st.
John Chester Adams, B.A. Yale University 1896, M.A. 1898	New Haven, Conn. English	75 Mansfield st.
Walter Maxwell Adriance, B.A. Yale University 1900, M.A. 1903	St. Louis, Mo. Economics	119 Wall st.
Hubert Hillary Suffern Aimes, PH.B. Yale University 1897	West Haven, Conn. History	West Haven
Mary Adèle Allen, B.A. Smith College 1886	Holyoke, Mass. Greek	83 Grove st.
Sessan Amakuki Myoshin College 1901	Kyoto, Japan Philosophy	925 Howard av.
Luther Anderson, B.A. Bethany College 1899, B.A. Yale University 1903	Lindsborg, Kans. History	260 Crown st.
William Gilbert Anderson, M.D. Western Reserve Univ. 1883, B.A. Yale University 1902, M.A. 1903	Cleveland, O. Biology	1187 Chapel st.
Irving Atwater Andrew, PH.B. Yale University 1903	Orange, Conn. Chemistry	Orange
Der Mahdesian Gabriel Arshag, B.A. Euphrates College 1896	Harpoot, Turkey English	137 Henry st.
Raymond Harman-Ashley, B.S. Rutgers College 1903	Bound Brook, N. J. Chemistry	1081 Chapel st.

Herbert Bassett Augur, B.A. Yale University 1897	Portland, Oregon History	A.
Charles Whitney Babcock, B.S. Knox College 1901	Rushville, Ill. English	697 W. D.
Edward Monroe Bailey, Jr., PH.B. Yale University 1902	Middletown, Conn. Chemistry and Botany	297 York st.
George Merrick Baker, B.A. Yale University 1900	Hartford, Conn. German	107 York st.
James Fred Baker, B.S. Mich. Agr. College 1902	St. Croix Falls, Wisc. Botany and Geology	159 Elm st.
Cecil Kittredge Bancroft, B.A. Yale University 1891	Andover, Mass. Classics	213 D.
Joseph Austin Bancroft, B.A. Acadia University 1903	Barton, N. S. Mineralogy	47 Lake pl.
Kate Grace Barber, B.S. Rhode Island College 1903	Carolina, R. I. Botany	136 Division st.
Julian Thomas Barclay, B.A. Bethany College (W. Va.) 1898, M.A. 1902, M.A. Yale University 1903	Bethany, W. Va. Romance Language	141 York st.
Arthur Henry Bartlett, Yale University 1898, M.A. 1900	Plainville, Conn. English	159 York st.
Samuel Eliot Bassett, B.A. Yale University 1898	New Haven, Conn. Classical Philosophy	168 Sheffield av.
Hugh Aiken Bayne, B.A. Yale University 1892, LL.B. Tulane University 1894	New York City History	A.
Grace Alida Beebe, PH.B. Wesleyan University 1901	New Haven, Conn. French	23 Prince st.
Silas Palmer Beebe, B.S. Harvard University 1900, M.S. Yale University 1902	Flushing, L. I., N. Y. Physiological Chemistry	New York City
Gertrude Harper Beggs, B.A. University of Denver 1893	St. Louis, Mo. Greek	34 Trumbull st.
Allen Rogers Benham, B.A. University of Minnesota 1900, M.A. 1901	St. Paul, Minn. English	119 Park st.
Gilbert Giddings Benjamin, PH.B. Syracuse University 1899	Buffalo, N. Y. History	451 FW.
Maxime Lucian Bergeron, B.A. College of City of New York 1903	New York City Romance Language	103 Park st.

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| Mary Florence Berry, B.A.
Mt. Holyoke College 1901 | <i>Portland, Me.</i> 16 Dwight st.
Fine Arts |
| Edward Bailey Birge, B.A.
Brown University 1891 | <i>Indianapolis, Ind.</i> 67 Mansfield st.
Music |
| Avard Longley Bishop, B.A.
Acadia University 1901,
B.A. Yale University 1903 | <i>Laurencetown, N. S.</i> 78 Lake pl.
Economics |
| Stanley Francis Blomfield, B.A.
Olivet College 1895,
B.D. Yale University 1899 | <i>Stony Creek, Conn.</i> Stony Creek
Biblical Literature |
| Anton Theophilus Boison, B.A.
University of Indiana 1897 | <i>Bloomington, Ind.</i> 23 Lynwood pl.
Botany and Geology |
| Harold Cornelius Bradley, B.A.
University of California 1900 | <i>Berkeley, Cal.</i> 2 Hillhouse av.
Physiological Chemistry |
| Edward Dudley Bradstreet, B.A.
Yale University 1901 | <i>Meriden, Conn.</i> Meriden
Fine Arts |
| Mercy Agnes Brann, B.A.
Colby College 1897 | <i>Dover, Me.</i> 37 Howe st.
English |
| Samuel Mason Brereton, B.A.
Yale University 1903 | <i>New Haven, Conn.</i> 8 Baldwin pl.
Latin |
| Henrietta Foster Brewer, B.A.
University of California 1895 | <i>Oakland, Cal.</i> 61 Trumbull st.
Latin and Greek |
| Howard Stanley Bristol, PH.B.
Yale University 1902 | <i>Meriden, Conn.</i> 162 S. L.
Chemistry |
| Ralph Bristol, B.A.
Yale University 1903 | <i>Ansonia, Conn.</i> A.
English and Economics |
| Howard Logan Bronson, B.A.
Yale University 1900 | <i>New Haven, Conn.</i> 1233 Chapel st.
Physics |
| Henry Dwight Brooks, B.A.
Williams College 1901 | <i>Westfield, Mass.</i> 27 High st.
Latin |
| Charles Clark Brown, PH.B.
Yale University 1903 | <i>New Haven, Conn.</i> 258 Franklin st.
Chemistry |
| Herbert Stanley Brown, B.A.
Yale University 1881, B.D. 1886 | <i>Darien, Conn.</i> Darien
Biblical Literature |
| James Brown, B.A.
Yale University 1902, M.A. 1903 | <i>Buffalo, N. Y.</i> 14 Whalley av.
Chemistry |
| Clarence John Buck, B.A.
Williams College 1903 | <i>Stockbridge, Mass.</i> 8 Prospect pl.
Botany and Geology |

Miriam Olive Buck, PH.B. Baylor University 1886	Waco, Texas	Brockett's Point English
Nellie Faulkner Buck, PH.B. Baylor University 1903	Waco, Texas	Brockett's Point Modern Language
George Augustus Bucklin, B.A. University of Oklahoma 1903	Norman, Okla.	706 W. D. Economics
Frederick Merwin Burgess, B.A. Yale University 1897	New Haven, Conn.	274 Dixwell av. Philosophy and History
Katharine Jeannette Bush, PH.D. Yale University 1901	New Haven, Conn.	133 Howe st. Natural Science
Arthur Deerin Call, PH.B. Brown University 1896	Ansonia, Conn.	Ansonia Philosophy
Edward Herbert Cameron, B.A. Acadia University 1900, B.A. Yale University 1903	Yarmouth, N. S.	78 Lake pl. Philosophy
Marian Dickinson Campbell, B.A. Radcliffe College 1899	Middlefield, Conn.	331 Temple st. English
Henry Seidel Canby, PH.B. Yale University 1899	Wilmington, Del.	8 B. M. H. English
David Hobart Carnahan, B.A. University of Illinois 1896, M.A. 1898	Minneapolis, Minn.	132 Howe st. French
Walter Orestes Cartwright, B.A. Brown University 1881	Wallingford, Conn.	Wallingford Philosophy
Gaetano Cavicchia, B.A. French-American College 1902	Newark, N. J.	88 Lake pl. Romance Language
Walter Lawrence Chamberlain, B.A. Yale University 1902, M.A. 1903	Springfield, Mass.	34 Lynwood pl. English
Joseph Hayes Chandler, B.A. Yale University 1877	Fond du lac, Wisc.	A. Biblical Literature
Charles Bolmer Cheyney, B.A. Yale University 1895	Washington, D. C.	A. Economics
Raymond Gilmore Clapp, B.A. Boston University 1900, B.D. Yale University 1903	So. Boston, Mass.	613 E. D. Biblical Literature
Samuel Hopkins Clapp, B.A. Yale University 1901	Pawtucket, R. I.	717 W. D. Chemistry
Alexander Ray Clark, Jr., B.A. Yale University 1895	New York City	A. Economics
Harry Henderson Clark, B.A. Yale University 1903	Winchester, Tenn.	A. Economics

Stephen Carlton Clark, B.A. Yale University 1903	Cambridge, Mass. English.	A.
Elizabeth Whittlesey Cleaveland, PH.B. Chicago University 1902	Lakeville, Conn. 89 Whalley av. English	
Oliver Eugene Closson, PH.B. Yale University 1903	Meriden, Conn. 119 Grove st. Physiological Chemistry	
Luther Gardner Coburn, B.S. Wesleyan University 1901	Seymour, Conn. 536 Elm st. Sociology	
Frederick Sears Coe, PH.B. Yale University 1899	Newark, N. J. Mechanical Engineering	A.
William Sloane Coffin, B.A. Yale University 1900	New York City Political and Social Science	A.
Frank Cummings Cook, B.A. Yale University 1900, M.A. 1902	Waterbury, Conn. 692 W. D. Physiol. Chemistry	
Charles Edward Cory, PH.B. Drake University 1901, M.A. 1902, M.A. Yale University 1903	Des Moines, Iowa 409 Orange st. Philosophy	
Donald John Cowling, B.A. Lebanon Valley College 1902, B.A. Yale University 1903	Scottsdale, Pa. 605 E. D. Philosophy	
William Bronson Cramer, PH.B. Yale University 1902	New Haven, Conn. 147 Dwight st. Physiol. Chemistry and Biology	
Alfred Miller Cressler, B.A. Yale University 1902	Fort Wayne, Ind. English	A.
Robert William Curtis, B.S. Trinity College 1896	Hartford, Conn. 222 Sherman av. Chemistry	
George Barton Cutten, B.A. Acadia College 1896, B.A. Yale University 1897, PH.D. 1902, B.D. 1903	New Haven, Conn. 80 First st. Philosophy	
Haroutune Mugurdich Dadourian, PH.B. Yale University 1903	Tarsus, Asia Minor Physics	N. S. H.
Albert Sargent Davis, B.A. Yale University 1896	New York City English	A.
Carl Willis Davis, B.A. Yale University 1902	Hartford, Conn. English	A.
Clarence Shepard Day, Jr., B.A. Yale University 1896	New York City Social Science	A.
George Parmly Day, B.A. Yale University 1897	New York City English	A.

Sidney Norton Deane, B.A. Yale University 1902	Northfield, N. Y. Classics	148 F.
Frank Butler Doane, B.A. Amherst College 1890, B.D. Yale University 1893	North Haven, Conn. Biblical Literature	North Haven
Edward Lewis Dodd, B.A. Western Reserve University 1897, M.A. 1901, M.A. Yale University 1902	Cleveland, O. Mathematics	120 York st.
Loring Holmes Dodd, B.A. Dartmouth College 1900, M.A. Columbia University 1901	New Haven, Conn. English	82 Admiral st.
Peter Tracy Dondlinger, B.A. National Normal University 1899	Mitchell, S. D. Social Science	336 George st.
Joseph William Dows, PH.B. Brown University 1899	Providence, R. I. Philosophy	Wallingford
Samuel William Dudley, PH.B. Yale University 1900, M.E. 1903	New Haven, Conn. Mechanical Engineering	333 York st.
Ellen Duncan, B.L. Baylor University 1897, M.L. 1900	Waco, Texas History	153 Franklin st.
Edward Lewis Durfee, B.A. Yale University 1896	New Haven, Conn. History	95 Cottage st.
Alba M. Edwards, B.A. University of Oklahoma 1903	Norman, Okla. Economics	706 W. D.
Clara Eliza Emerson, B.A. Wellesley College 1891	Beloit, Wisc. English	89 Whalley av.
Charles Telford Erickson, B.A. DePauw University 1891, M.A. 1893, B.D. Boston University 1895, M.A. Yale University 1903	Indianola, Iowa Comparative Religion and Missions	32 Grove st.
Ida Josephine Everett, B.L. Mt. Holyoke College 1893	Norwood, Mass. English	32 Howe st.
Arthur Henry Rolph Fairchild, B.A. University of Toronto 1900, M.A. Yale University 1903	Toronto, Canada Philosophy	40 Whalley av.
Fred Rogers Fairchild, B.A. Doane College 1898	Crete, Nebr. Economics	1233 Chapel st.
Hollon Augustine Farr, B.A. Yale University 1896, M.A. 1902	Athol, Mass. German	170 F.
Mansfield Ferry, B.A. Yale University 1903	Cambridge, Mass. English	A.

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| Charles Paxson Flora, B.A.
Yale University 1902 | Columbia, Pa.
Chemistry | 8 Prospect pl. |
| Joseph Fogelberg, B.A.
Bethany College 1899 | Lindsborg, Kans.
German | 128 Wall st. |
| George Levi Fox, B.A.
Yale University 1874, LL.B. 1879, M.A. 1885 | New Haven, Conn.
Classics | 7 College st. |
| Hubert Bruce Fuller, B.A.
Columbian University 1900, LL.B. 1903,
B.A. Yale University 1901 | Washington, D. C.
History | A. |
| Stanley Leman Galpin, B.A.
Western Reserve University 1901,
M.A. Yale University 1902 | New Haven, Conn.
Romance Languages | 77 Mansfield st. |
| Arthur James Gammack, B.A.
Trinity College, Toronto, 1891, M.A. 1902 | West Haven, Conn.
Biblical Literature | West Haven |
| William VanNest Garretson, B.S.
Rutgers College 1902 | Somerville, N. J.
Mathematics | 103 Park st. |
| Milton Stahl Garver, B.A.
Western Reserve University 1901,
M.A. Yale University 1902 | Tiffin, O.
Romance Languages | 1157 Chapel st. |
| Robert Banks Gibson, PH.B.
Yale University 1902 | New Haven, Conn.
Physiological Chemistry | 18 Trumbull st. |
| Fred Macdonald Gilbert, B.A.
Yale University 1898 | Brooklyn, N. Y.
Biblical Literature | A. |
| Ralph Davis Gilbert, B.S.
Boston University 1900 | Gilead, Conn.
Chemistry | Kent Lab'y |
| Clifford Joseph Gleason, B.A.
Yale University 1900 | New Haven, Conn.
Modern Languages | 925 Howard av. |
| Edward Franklin Goin, B.A.
Fisk University 1898,
B.D. Oberlin Theological Seminary 1901 | Birmingham, Ala.
Biblical Literature | 1320 Chapel st. |
| Thomas Warrington Gosling, B.A.
Yale University 1894 | Cincinnati, O.
English | A. |
| Arthur Leopold Temple Gould, B.L.
Pomona College 1901 | Claremont, Cal.
Philosophy | 141 York st. |
| Benjamin Spencer Gowen, B.A.
Yale University 1901, M.A. 1902 | Winchester, Tenn.
Philosophy | 477 Elm st. |
| Arthur Harmount Graves, B.A.
Yale University 1900 | Hartford, Conn.
Botany | 48 N. S. H. |
| Paul Ernst Gross, B.A.
Moravian College 1900,
B.D. Yale University 1903 | Unionville, Mich.
Biblical Literature | 612 E. D. |

Lars Johan Evald Hallander Nya Elementarskolan, Stockholm 1891, Upsala University, Sweden 1893	<i>Sköfde, Sweden</i>	10 Ashmun st. German
Alice Bradford Hammond, B.A. Bryn Mawr College 1898	<i>New Haven, Conn.</i>	43 Orchard st. Latin and History
Austin Morris Harmon, B.A. Williams College 1902, M.A. Yale University 1903	<i>Brockport, N. Y.</i>	361 Elm st. Classics
William Allen Harper, B.A. Elon College 1899	<i>Elon College, N. C.</i>	713 W. D. Latin
Isaac Faust Harris, B.S. University of North Carolina 1900, M.S. 1903	<i>New Haven, Conn.</i>	121 Huntington st. Physiol. Chemistry
Philip Talbot Harris, B.A. Bowdoin College 1903	<i>East Machias, Me.</i>	25 Whalley av. Botany and Geology
Robert Ritchie Harwell, B.A. Hampden-Sidney College 1897, M.A. 1898, B.D. Yale University 1903	<i>Petersburg, Va.</i>	627 E. D. Biblical Literature
Ernest Hausberg, B.A. Yale University 1901	<i>Charles City, Iowa</i>	A. English
George Edmund Haynes, B.A. Fisk University 1903	<i>Hot Springs, Ark.</i>	677 W. D. Philosophy and Social Science
Constans Alexis Hemborg, B.A. Augustana College 1899, Ph.B. University of Michigan 1900, M.A. 1901	<i>Moline, Ill.</i>	103 Park st. English and Latin
George Garr Henry, B.A. Yale University 1901	<i>Washington, D. C.</i>	A. English
Arthur Frederick Hertell, B.A. Doane College 1889, M.A. 1892, B.D. Lutheran Seminary 1895	<i>Macomb, Ill.</i>	88 Lake pl. History
Albert Hileman, B.A. Yale University 1903	<i>Trunktown, Pa.</i>	381 WH. Chemistry
Ishiro Hirano, B.A. Keiogijiku University 1902	<i>Tokyo, Japan</i>	373 Crown st. Economics
Jungo Hirota Waseda University 1902	<i>Tokyo, Japan</i>	30 Home pl. Political Science
Jiunnosuke Hitomi, B.A. Waseda University 1896	<i>Kyoto, Japan</i>	373 Crown st. Economics and Sociology
Charles Barnes Hoadley, Ph.B. Yale University 1903	<i>Branford, Conn.</i>	Branford Metallurgy and Mining
Francis Jerome Holder, B.S. National Normal University 1896	<i>LaCrosse, Fla.</i>	17 Edgewood av. Mathematics

Lucius Hudson Holt, B.A. Yale University 1902	Hartford, Conn. English	84 Wall st.
May Engstrom Hoss, M.A. Kansas University 1902	Wichita, Kans. English	87 Howe st.
Albert Kemp Hubbard, PH.B. Yale University 1901	Kane, Pa. Civil Engineering	A.
Harry Mortimer Hubbell, B.A. Yale University 1902	New Haven, Conn. Classics	37 Lake pl.
William Southworth Hunt, B.A. Yale University 1901	Newark, N. J. English	A.
Albert S. Hurst, B.A. University of Toronto 1899	Morpeth, Ontario Philosophy	Bridgeport
Lola LaMotte Iddings, B.A. Vassar College 1889	Orange, N. J. English	Orange
Seiichi Ishimura Keiogijiku University 1896	Iyo, Japan Political Economy	907 Howard av.
George Brown Jackson, B.A. Western College 1901, B.A. Yale University 1902	Toledo, Iowa German	715 W. D.
D L James, B.A. Yale University 1902	Kansas City, Mo. Modern Language	A.
George Samuel Jamieson, PH.B. Yale University 1901	Bridgeport, Conn. Chemistry	162 S. L.
Hopkin Jenkins, B.A. Yale University 1900	Portland, Oregon History	A.
Wilhelm Julius Edward Jente, B.A. Yale University 1897, M.A. 1902	New Haven, Conn. German	97 Bristol st.
Carl Wilhelm Johnson, B.A. Bethany College 1900. M.A. Yale University 1902	Lindsborg, Kans. German	33 Lock st.
William Savage Johnson, B.A. Yale University 1900	Meriden, Conn. English	1157 Chapel st.
Donald Kent Johnston, B.A. Yale University 1903	New York City Sociology	A.
John Francis Johnston, B.D. Knox College, Toronto 1900, M.A. Illinois Wesleyan University 1901, PH.D. 1902	Glencoe, Ontario Biblical Literature	119 Park st.
Frank Oscar Jones, B.A. Brown University 1897	New Haven, Conn. Philosophy	387 Edgewood av.

Jiroku Kawabe Doshisha College 1893, M.A. Yale University 1900	<i>Kyoto, Japan</i> 363 Crown st. Philosophy
Daniel Edwards Kennedy, B.A. Yale University 1903	<i>Nashua, N. H.</i> A. English.
Andrew Keogh	<i>New Haven, Conn.</i> 751 George st. Modern Languages
Edwin Burruss King, B.A. Yale University 1898	<i>Southboro, Mass.</i> A. English
Linus Warner Kling, B.A. Augustana College 1892, M.A. University of Nebraska 1899	<i>Rock Island, Ill.</i> 105 Park st. Latin
Arthur Potter Knight, PH.B. Yale University 1902	<i>Rome, N. Y.</i> A. Sanitary Engineering
Joseph Lehn Kreider, B.S. Lebanon Valley College 1902	<i>Annaville, Pa.</i> 373 Crown st. Chemistry
Tozaburo Kudo, M.A. DePauw University 1897, PH.D. Yale University 1903	<i>Tokyo, Japan</i> 722 W. D. Philosophy
Ko Kumashiro Daishi Kōtōgakkō 1901	<i>Tokyo, Japan</i> 30 Home pl. Economics
Beverly Waugh Kunkel, PH.B. Yale University 1901	<i>Harrisburg, Pa.</i> B. M. H. Biology
Yoshihiko Kurata Keiogijuku College 1897	<i>Nagato, Hagi, Japan</i> 103 Park st. Economics
Charles Scott Landers, PH.B. Yale University 1900	<i>Thurmont, Pa.</i> 114 High st. Civil Engineering
William Gilbert Lathrop, B.A. Brown University 1889, B.D. Yale University 1892	<i>Shelton, Conn.</i> Shelton Social Science
Ellis Earl Lawton, B.S. University of Rochester 1902	<i>Syracuse, N. Y.</i> 336 George st. Physics
Charles Henry Leeds, B.S. Princeton University 1895	<i>Stamford, Conn.</i> 74 Lake pl. Political Economy
Frederick Lent, B.A. Brown University 1900, M.A. 1901, B.D. Newton Theol. Institute 1900	<i>New Bedford, Mass.</i> 63 Clark st. Biblical Literature
Oliver Clarence Lester, B.A. Central College 1897, M.A. 1898, M.A. Yale University 1901	<i>Fayette, Mo.</i> 479 Elm st. Physics

Jacob Joshua Levison, B.A. College of City of New York 1902	<i>New York City</i> 96 Washington av. Botany and Geology
Dudley Payne Lewis, B.A. Yale University 1903	<i>New York City</i> A. Biblical Literature
Edwin Colby Lewis, B.A. Yale University 1901	<i>St. Johnsbury, Vt.</i> A. Economics
William Albert Lilley, Jr., PH.B. Yale University 1903	<i>Little Silver, N. J.</i> 37 College st. Mechanical Engineering
Milton Charles Loeb, PH.B. Yale University 1903	<i>New Haven, Conn.</i> 129 St. John st. Chemistry
Herbert Norton Loomis, B.S. Harvard University 1901	<i>New Haven, Conn.</i> 635 George st. Philosophy
George Blakeman Lovell, B.A. Yale University 1901, M.A. 1903	<i>New Haven, Conn.</i> 91 Dwight st. Psychology
Gilbert Lovell, B.A. Yale University 1900, B.D. Hartford Theological Seminary 1903	<i>Plainfield, N. J.</i> A. Biblical Literature
Frederick Bliss Luquiens, B.A. Yale University 1897	<i>New Haven, Conn.</i> 201 Bishop st. Romance Languages
Huc Mazelet Luquiens, B.A. Yale University 1902	<i>New Haven, Conn.</i> 201 Bishop st. Fine Arts
Willard Blackinton Luther, B.A. Yale University 1902	<i>Providence, R. I.</i> A. English
Helen Mowry Lyman, B.A. Mt. Holyoke College	<i>West Brookfield, Mass.</i> 568 Chapel st. Biology
Thomas McCandless, B.A. Yale University 1900, B.D. 1903	<i>Aiken, S. C.</i> A. Semitic Language
Raymond Benedict McClenon, B.A. Yankton College 1902	<i>Huron, S. D.</i> 366 Whalley av. Mathematics
George Grant MacCurdy, B.A. Harvard University 1893, M.A. 1894	<i>New Haven, Conn.</i> 237 Church st. Anthropology
James Patrick McDonough, B.A. Yale University 1903	<i>New Haven, Conn.</i> 38 Hallock st. Botany and Mineralogy
Margaret McLaughlin, B.A. Lebanon Normal University 1890, LL.B. 1892	<i>Smithland, Tenn.</i> 153 Franklin st. English
Mary Elizabeth MacLean, PH.B. University of California 1889	<i>Oakland, Cal.</i> 22 Whalley av. English
Albert Alonzo Madsen, B.A. Moravian College 1900, B.D. 1902, B.D. Yale University 1903	<i>St. Charles, Minn.</i> 714 W. D. Bibl. Lit. and Semit. Lang.

Herbert Samuel Mallory, PH.B. Western Reserve Univ. 1899, M.A. 1900	Akron, O. English	87 Dwight st.
Antonio Marinoni Desenzano, Italy 1900	Waterbury, Conn. Latin	539 Chapel st.
Herbert Martin, B.A. Kentucky University 1899, M.A. 1900	Lexington, Ky. Philosophy	723 Elm st.
Roy Murdoch Mason, B.A. Yale University 1902	New York City English	A.
Jesse Sarkio Matossian, Central Turkey College 1897	Aintab, Turkey Psychology and Pedagogy	159 Bradley st.
Ralph Nelson Maxson, B.S. Rhode Island State College 1902	Westerly, R. I. Chemistry	11 College st.
Colton Maynard, B.A. Yale University 1901	Baltimore, Md. History and English	A.
Herbert Edwin Medway, B.A. Yale University 1900	Daleville, Pa. Chemistry	692 W. D.
Clayton D. Mell, B.A. Franklin and Marshall College 1902	Lebanon, Pa. Mineralogy	59 Prospect st.
Antonio Mendoza, PH.B. Yale University 1903	Havana, Cuba Chemistry and Engineering	120 College st.
George Albert Menge, PH.B. Yale University 1903	New Haven, Conn. Chemistry	114 Howe st.
Ernest Loren Meritt, B.A. Wesleyan University 1891, M.A. Yale University 1903	West Eaton, N. Y. Greek	435 Elm st.
Walter Eugene Meyer, B.A. Yale University 1901	New York City English	A.
Kumazo Mikami, B.D. Trinity College, Japan 1890, M.A. Yale University 1903	Tokyo, Japan Social Science	6 Trumbull st.
Hiram Miller, PH.B. Yale University 1901	Middlefield, Conn. Sanitary Engineering	A.
Douglas Maxwell Moffat, B.A. Yale University 1903	Scranton, Pa. English	135 F.
Seth Enoch Moody, B.S. Dartmouth College 1898	Ballard Vale, Mass. Chemistry.	105 Park st.
James Caddall Morehead, B.A. Roanoke College 1898, M.A. 1899, M.S. Princeton University 1900	Wytheville, Va. Mathematics	691 W. D.
Jitaro Mori Doshisha College 1894	Iyo, Japan Social Science	68 Park st.

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| Walter Jean Morrill, B.S.
University of Maine 1899 | <i>Madison, Me.</i> 35 Townsend st.
Botany and Geology |
| Ray Morris, B.A.
Yale University 1901 | <i>New York City</i> A.
Economics |
| Blanche Morse, PH.B.
University of California 1894 | <i>Berkeley, Cal.</i> 92 Dwight st.
English and Philosophy |
| Sydney Byron Morton, B.A.
Yale University 1900 | <i>Chicago, Ill.</i> 90 S. M.
Latin and Greek |
| Albert Curtiss Moses, B.A.
Carleton College 1889, M.A. 1892,
B.D. Chicago Theol. Sem. 1892 | <i>New Haven, Conn.</i> 286 Humphrey st.
Biblical Literature |
| Russell Mott, B.A.
Yale University 1901 | <i>Michigan City, Ind.</i> A.
English |
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University of Oregon 1898,
M.A. Yale University 1903 | <i>Coburg, Oregon</i> 1233 Chapel st.
English |
| Chonosuke Nakamura
Tohoku Gakuin 1893,
Sendai Theological Seminary 1895,
B.D. Pacific Theol. Seminary 1903 | <i>Sendai, Japan</i> 644 E. D.
Philosophy |
| Louis Philip Nash, M.A.
Amherst College 1901 | <i>Holyoke, Mass.</i> Holyoke
Philosophy |
| Harry Camble Neel, B.S.
Pennsylvania State College 1903 | <i>Dravosburg, Pa.</i> 182 Mansfield st.
Botany and Geology |
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Johns Hopkins University 1903 | <i>Baltimore, Md.</i> 135 College st.
Mineralogy |
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Leland Stanford Jr. Univ. 1892,
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English |
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Yale University 1903 | <i>Middletown Springs, Vt.</i> 1081 Chapel st.
Metallurgy and Mining |
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University of Wooster 1900,
M.A. Yale University 1903 | <i>Wooster, O.</i> 1157 Chapel st.
History |
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Yale University 1897, B.A. 1898 | <i>New Haven, Conn.</i> 373 Crown st.
Economics |
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Yale University 1902 | <i>Brooklyn, N. Y.</i> A.
English |
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Mt. Holyoke College 1896 | <i>Exeter, Conn.</i> 230 Oak pl.
Mathematics |

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Harvard University 1903 | <i>Shelton, Conn.</i> | 120 York st.
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Augustana College 1901,
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History |
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Yale University 1898 | <i>Simsbury, Conn.</i> | A.
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Harvard University 1903 | <i>Cambridge, Mass.</i> | 8 Prospect pl.
Botany and Geology |
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University of Toronto 1901 | <i>Toronto, Ontario</i> | 710 Yale Station
English |
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Yale University 1903 | <i>Chicago, Ill.</i> | A.
English |
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University of Chicago 1903 | <i>Paw Paw, Ill.</i> | 83 Sachem st.
Botany and Geology |
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Yale University 1893,
LL.B. Boston University 1895 | <i>Chicago, Ill.</i> | A.
History |
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Wesleyan University 1899,
M.A. Yale University 1901, LL.B. 1903 | <i>Bridgeport, Conn.</i> | Bridgeport
Philosophy |
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Yale University 1903 | <i>Peekskill, N. Y.</i> | 135 F.
Economics |
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Yale University 1900, M.A. 1901 | <i>New Haven, Conn.</i> | 701 W. D.
Romance Languages |
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Mathematics |
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Yale University 1896 | <i>New Haven, Conn.</i> | 341 Winthrop av.
Romance Languages |
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Amherst College 1884, M.A. 1901,
M.D. University of Iowa 1895 | <i>Iowa City, Iowa</i> | 2 Hillhouse av.
Physiological Chemistry |

Bronson Case Rumsey, B.A. Yale University 1902	<i>Southborough, Mass.</i> English	A.
Ernest Avery Sanders, B.A. Otterbein University 1902, M.A. Ohio State University 1903	<i>Waterville, O.</i> Mineralogy and Geology	606 E. D.
Charles Edward Sargent, M.A. Bates College 1887	<i>New Haven, Conn.</i> Philosophy	20 Eld st.
Clifton James Sarle, B.S. University of Rochester 1902, M.S. 1903	<i>Rochester, N. Y.</i> Paleontology	901 Howard av.
Marvin McRae Scarborough, B.A. University of Oregon 1902	<i>Eugene, Oregon</i> Biology	925 Howard av.
Carl Frederick Francis Schulz, B.A. Yale University 1901	<i>Corona, L. I.</i> History	204 Winthrop av.
Samuel Scoville, B.A. Yale University 1893, LL.B. N. Y. Law School 1895	<i>Philadelphia, Pa.</i> Scandinavian Languages	A.
Warren Bartlett Seabury, B.A. Yale University 1900, B.D. Hartford Seminary 1903	<i>Wellesley Hills, Mass.</i> Comparative Religion	696 W. D.
Laura Randolph Seguire, B.A. Columbia University 1903	<i>Rosebank, N. Y.</i> Latin	122 Howe st.
Frederick Isaac Selzer, B.A. Northwestern University 1903	<i>Walker, Iowa</i> Philosophy	63 Clark st.
Genzaburo Seshimo Waseda University 1902	<i>Gunmaken, Japan</i> Economics	6 Trumbull st.
William Forsythe Sherfesees, B.A. College of Charleston, S. C. 1903	<i>Charleston, S. C.</i> Botany and Geology	70 Whalley av.
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Franklin Victory Sikes, B.A. Yale University 1900	<i>Suffield, Conn.</i> Fine Arts	621 E. D.
Ferdinand Augustus Silcox, B.A. College of Charleston, S. C. 1903	<i>Charleston, S. C.</i> Botany and Geology	70 Whalley av.
William Ernest Andrew Slaght, B.A. Toronto University 1898, B.D. Yale University 1902	<i>Westbrook, Conn.</i> Biblical Literature	Westbrook
Clara Eliza Smith, B.A. Mt. Holyoke College 1902	<i>Northford, Conn.</i> Mathematics	42 Park st.
Ernest Walker Smith, B.A. Yale University 1901	<i>Farmington, Conn.</i> English	A.

- Keith Smith, B.A. *Manila, Utah* A.
Yale University 1902 Economics
- Sarah Elizabeth Marquand Smoot, B.A. *New Bedford, Mass.*
University of California 1899 1233 Chapel st.
English
- Mary Winslow Smyth, B.L. *New Haven, Conn.* 328 Temple st.
Smith College 1895 English
- Charles Edward Snoke, B.A. *Newburg, Pa.* 630 E. D.
Lebanon Valley College 1900, Biblical Literature
B.D. Union Biblical Seminary 1903
- Paul Myers Souder, B.A. *Lafayette, Ind.* 37 Lake pl.
Indiana University 1903 Zoology
- Joannes Gabriel Statiropoulos, B.A. *Angora, Turkey* Box 860 Yale Sta.
Anatolia College 1899 Chemistry
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Acadia University 1902, Philosophy
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Columbian University 1902 Geology and Mineralogy
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Augsburg Seminary 1898, Semitic Languages
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Leland Stanford Jr. University 1899, Physiology and Physiol. Chemistry
M.S. Yale University 1901
- Martin John Synnott, B.A. *Montclair, N. J.* A.
Yale University 1892 History
- Mignon Talbot, B.A. *Columbus, O.* 130 Howe st.
Ohio State University 1892 Paleontology
- Leonard Merrill Tarr, B.A. *New Haven, Conn.* 344 Sherman av.
Bates College 1882, Meteorology and Physics
M.A. Yale University 1901
- Edwy Lycurgus Taylor, PH.B. *Albany, N. Y.* A.
Yale University 1901 Civil Engineering
- Wyatt Warner Taylor, PH.B. *Stamford, Conn.* A.
Yale University 1900 Mechanical Engineering
- Lucy Elizabeth Textor, PH.B. *Chicago, Ill.* 144 Greene st.
University of Michigan 1894, History
M.A. Leland Stanford Jr. Univ. 1895
- Norman Campbell Thorne, B.A. *Central Valley, N. Y.* Kent Lab'y.
Yale University 1902 Chemistry

- Edward Thorstenberg, B.A. *Assaria, Kans.* 47 N. S. H.
Bethany College 1899, German
M.A. Yale University 1902
- Herman Justus Thorstenberg, B.A. *Assaria, Kans.* 132 Wall st.
Bethany College 1902, History and Social Science
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- George Rexford Tillson, B.A. *Montclair, N. J.* A.
Yale University 1903 German
- John Quillin Tilson, B.A. *Clear Branch, Tenn.* 463 FW.
Yale University 1891, LL.B. 1893, M.L. 1894 Economics
- John Arend Timm, B.D. *New Haven, Conn.* 106 York sq.
Yale University 1902 Biblical Literature and Semitic Languages
- Edson Newton Tuckey, B.A. *St. Paul, Minn.* 23 Lynwood pl.
Hamlin College 1893 Economics
- Ralph Hermon Tukey, B.A. *Windham Center, Me.* 139 Dwight st.
Bates College 1898, Greek and Latin
M.A. Harvard University 1901
- Edgar Collins Tullar, B.A. *Seymour, Conn.* Seymour
Albion College 1897 Biblical Literature
- Albert William VanBuren, B.A. *New Haven, Conn.* Rome, Italy
Yale University 1900 Classics
- Harry Brown VanDeventer, B.A. *Elizabeth, N. J.* 1076 Chapel st.
Yale University 1903 Latin
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Bethany College 1903 Mathematics
- Minot Lester Wallace, B.A. *Englewood, N. J.* A.
Yale University 1897 History and Latin
- Arthur Gustavus Ward, B.A. *Evans Mills, N. Y.* 569 P.
Yale University 1900 German
- Brownlee Robertson Ward, B.A. *New Haven, Conn.* 231 York st.
Yale University 1888, PH.B. 1889, French History
M.D. Columbia University 1892
- Freeman Ward, B.A. *Yankton, S. D.* 270 L.
Yale University 1903 Geology
- Antonio Johnston Waring, B.A. *Savannah, Ga.* Dwight Hall
Yale University 1903 Biology
- Charles Milnor Washington, B.A. *Locust, N. J.* 653 E. D.
Yale University 1889, LL.B. 1895, M.A. 1901 Classics
- Gardiner Watkins, B.A. *New York City* 53 Lake pl.
Princeton University 1903 Botany and Mineralogy

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| John Jerome Wedel, B.A.
Bethany College 1903 | <i>Pretty Prairie, Kans.</i> 53 Prospect st.
German |
| Luther Cornelius Weeks, B.S.
Bethany College 1900 | <i>Lindsborg, Kans.</i> 267 Orange st.
Mathematics |
| Luther Allen Weigle, B.A.
Pennsylvania College 1900, M.A. 1903 | <i>Mechanicsburg, Pa.</i> 62 Lake pl.
Philosophy |
| George Arnold Welch, B.A.
Yale University 1901 | <i>Cleveland, O.</i> A.
English |
| Charles Heald Weller, B.A.
Yale University 1895 | <i>New Haven, Conn.</i> 392 Orange st.
Greek |
| Lage von Wernstedt
Royal Inst. of Technol., Stockholm 1902 | <i>Strengnäs, Sweden</i> 142 Sheffield av.
Botany and Geology |
| Wilhelmus David Allen Westfall, B.A.
Yale University 1901 | <i>Montague, N. J.</i>
Göttingen, Germany
Mathematics |
| Monroe Nichols Wetmore, B.A.
Yale University 1888, M.A. 1900 | <i>Lebanon, Conn.</i> 122 Howe st.
Latin |
| Arnót Wilson Whetstone, B.A.
Otterbein University 1902,
M.A. Ohio State University 1903 | <i>Van Buren, O.</i> 606 E. D.
Mineralogy and Geology |
| Ogden Watson White, B.A.
Yale University 1901 | <i>Waterbury, Conn.</i> A.
English |
| Everett Thomas Whitford, B.A.
Brown University 1902, M.A. 1903 | <i>New Bedford, Mass.</i> 635 E. D.
Biblical Literature |
| Paul Whitin, B.A.
Yale University 1898 | <i>Northbridge, Mass.</i> A.
English |
| George Reber Wieland, B.S.
Pennsylvania State College 1893.
Ph.D. Yale University 1900 | <i>Chester, Pa.</i> Museum
Paleobotany |
| David Wilder, B.A.
Talladega College 1901 | <i>Mobile, Ala.</i> 106 Goffe st.
Philosophy and Sociology |
| Eliza Gregory Wilkins, B.A.
Wellesley College 1900 | <i>Willimantic, Conn.</i> 131 Dwight st.
Greek |
| Anson Smith Williams, B.A.
Leland Stanford Jr. University 1903 | <i>San Francisco, Cal.</i> 379 Crown st.
History |
| Arthur Baldwin Williams, Jr., B.A.
Yale University 1898 | <i>New York City</i> A.
Philosophy |
| Arthur Collins Williams, B.A.
Yale University 1898 | <i>Hartford, Conn.</i> A.
Biblical Literature |

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| Samuel Garland Winstead, B.A.
Trinity College 1901, M.A. 1902 | <i>Roxboro, N. C.</i>
Philosophy | 646 E. D. |
| Andrew Lincoln Winton, PH.B.
Yale University 1884 | <i>New Haven, Conn.</i>
Botany and Chemistry | 136 Canner st. |
| De Winter, B.L.
University of California 1892,
M.A. Harvard University 1894 | <i>Berkeley, Cal.</i>
English | 92 Dwight st. |
| John William Withers, B.A.
National Normal University 1891, PH.D. 1897,
M.A. Yale University 1902 | <i>Lebanon, O.</i>
Philosophy | 20 Whalley av. |
| George Edward Woodbine, B.A.
Yale University 1903 | <i>Harding, Mass.</i>
History | 74 Wall st. |
| Truman Doane Woodbury, PH.B.
Brown University 1903 | <i>East Orleans, Mass.</i>
Botany and Geology | 42 Lake pl. |
| Benjamin Mead Wright, B.D.
Yale University 1897, M.A. 1903 | <i>Orange, Conn.</i>
English | Orange |
| Arthur Frederic Yaggy, B.A.
Yale University 1901 | <i>Hutchinson, Kans.</i>
English | A. |
| Kaiei Yamasaki
Kelogijiku University 1901,
M.A. Yale University 1902 | <i>Tokyo, Japan</i>
Philosophy | 103 Park st. |
| Masajiro Yokoyama
Doshisha College 1896,
M. A. Yale University 1901 | <i>Okayama, Japan</i>
Economics, Finance | 381 George st. |
| Tokumatsu Yonemura
Kumamoto College 1896 | <i>Kumamoto, Japan</i>
Political Economy | 6 Trumbull st. |
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McGill University 1898, M.S. 1901 | <i>Kingston, Ontario</i>
Geology | 333 York st. |
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Muhlenberg College 1902 | <i>Bethlehem, Pa.</i>
English | 159 York st. |
| Charles Hamline Zimmerman, B.A.
Northwestern Univ. 1891, M.A. 1892,
PH.D. Yale University 1897 | <i>New Haven, Conn.</i>
Music | 83 Grove st. |
| Theodore C. Zschokke, B.A.
Leland Stanford Jr. University 1902 | <i>Palo Alto, Cal.</i>
Geology and Mineralogy | 53 Prospect st. |

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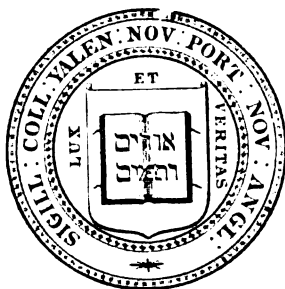
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BULLETIN

OF

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GRADUATE SCHOOL

1905-1906

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3. The Pamphlets of the Several Departments.

THE TUTTLE, MOREHOUSE & TAYLOR PRESS, NEW HAVEN, CONN. -

GRADUATE SCHOOL
OF
YALE UNIVERSITY

COURSES OF INSTRUCTION

FOR

1905-1906



NEW HAVEN:

1905

CALENDAR

1905

- 28 Sept. Thursday FIRST TERM begins.
29 Nov. Wednesday THANKSGIVING RECESS begins 1.20 P. M.
1 Dec. Friday RECESS ends, 8 A. M.
20 Dec. Wednesday FIRST TERM ends.

Winter Vacation

1906

- 10 Jan. Wednesday SECOND TERM begins.
11 April Wednesday SPRING RECESS begins, 1.20 P. M.
19 April Thursday RECESS ends, 8 A. M.
24 June Sunday Baccalaureate Sermon.
27 June Wednesday COMMENCEMENT.

Summer Vacation

- 27 Sept. Thursday FIRST TERM begins.
19 Dec. Wednesday FIRST TERM ends.
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For information with regard to the Graduate School, not contained in this pamphlet, and also with regard to Fellowships and Scholarships (see pages 14 to 16), address the Dean,

Professor ANDREW W. PHILLIPS.

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GENERAL STATEMENT

ORGANIZATION

The Graduate School of Yale University is a section of the Department of Philosophy and the Arts, which was first formally organized in 1847 for scientific and graduate instruction, but now includes Yale College, the Sheffield Scientific School, the School of the Fine Arts, the Department of Music, and the Forest School.

The degrees of Doctor of Philosophy and Civil Engineer were first offered in 1860, the degree of Dynamical or Mechanical Engineer in 1873, that of Master of Arts (previously given without evidence of study) in 1874, and that of Master of Science in 1897.

The professors in the several sections of the Department of Philosophy and the Arts together constitute the Faculty of the Graduate School. The general oversight of graduate instruction and graduate students is entrusted to the Dean and the Administrative Committee, who may be called upon for information and advice. Students are expected to report to the Dean soon after reaching New Haven.

ADMISSION AND REGISTRATION

Graduates of this and other Colleges and Universities, and (in exceptional cases, by special permission) other persons of liberal education, who are at least eighteen years old, are received as students for longer or shorter periods, with or without reference to the attainment of a degree.

All students who take courses in the Graduate School are required to register their names at the office of the Dean at the beginning of each year of study.

The degree of Doctor of Philosophy, with the courses of the Graduate School leading thereto, is open to candidates without distinction of sex.

FEES AND EXPENSES

The fee for instruction is generally one hundred dollars per year ; but it may be more, or less, according to the courses pursued and the amount of instruction received.

A special fee of five dollars is charged to those who use the Gymnasium.

Board is obtained at prices varying from three and a half to eight dollars a week. The average price is under five dollars.

A list of suitable rooms is kept at the Dean's office.

INSTRUCTION

Courses of study are offered in the following departments :

A. LANGUAGE, LITERATURE, AND THE ARTS

- I. CLASSICAL AND INDO-IRANIAN PHILOLOGY.
- II. SEMITIC LANGUAGES AND BIBLICAL LITERATURE.
- III. MODERN LANGUAGES AND LITERATURES.
- IV. THE FINE ARTS.
- V. MUSIC.

B. THE PHYSICAL AND NATURAL SCIENCES AND MATHEMATICS

- VI. THE PHYSICAL AND NATURAL SCIENCES.
- VII. MATHEMATICS.

C. THE SOCIAL SCIENCES, HISTORY, PHILOSOPHY, AND EDUCATION

- VIII. THE SOCIAL SCIENCES, HISTORY, AND LAW.
- IX. PHILOSOPHY.
- X. THE THEORY AND PRACTICE OF EDUCATION.

Instruction is given partly by lectures, partly in recitations and by oral and written discussions, partly by directing courses of reading, and partly by the direction of work in the laboratories and with instruments.

DEGREES

The DEGREE OF DOCTOR OF PHILOSOPHY is conferred upon those students who show the results of resident graduate work by a thesis giving evidence of high attainment and power of investigation, and by an examination on studies whose grade and amount meet the approval of the Faculty. Under ordinary circumstances two or more years' work in residence will be required, but in exceptional cases work of equal grade at another University may take the place of a year's residence here. The thesis must be deposited at the Library for public inspection, not later than May 1. A good knowledge of Latin, German, and French is required in all cases, unless, for some very exceptional reasons, the candidate be excused by the Faculty. Evidence of sufficient attainments in these languages must be furnished the Dean at least two years before the degree is given. The fee for instruction is one hundred dollars per year. The fee for graduation is ten dollars.

The DEGREE OF MASTER OF ARTS is conferred on Bachelors of Arts of Yale College (and on Bachelors of Arts of other colleges whose course of study is equivalent to that of Yale College), who have given to the College Faculty evidence of satisfactory progress in liberal studies after receiving their first degree. Such evidence may be furnished by one year's systematic study (not professional) in New Haven, under the direction of the College Faculty, followed by an examination. Graduates of other colleges can obtain the degree only by residence as thus described. The charge for instruction is usually one hundred dollars per year, with a fee of ten dollars for the degree.

Such Bachelors of Arts of *Yale College* as may not choose to reside at the College for study may, at any time not less than three years after graduation, show, in either

of the two following ways, that they have spent a year in liberal (and non-professional) study, and are worthy of recommendation for this degree. (1) Such candidates may apply to the Faculty for the designation of a course of study, on which an examination shall be taken. This application must be accompanied by a fee of twenty-five dollars. (2) Or a candidate may submit as evidence of his fitness for this degree a printed essay, for the examination of which a fee of twenty-five dollars (to be paid in advance) is required. An additional fee of ten dollars will be charged in all cases for the degree.

A committee of the Faculty is appointed (consisting for the present year of Professors Wheeler and Phillips), to whom candidates for this degree must submit their proposed courses of study for approval by the end of October in each year; and the evidence of a year's study must be submitted to the same committee by June 1.

The DEGREE OF MASTER OF SCIENCE is conferred on graduates of this or other universities, of two years' standing or upwards, who have taken their first degree in science and who pursue successfully a higher course of study in science under the direction of the Governing Board of the Sheffield Scientific School. Such a course involves at least one year of resident graduate study, followed by an examination and the presentation of a satisfactory thesis in some department of science. A committee of the Faculty is appointed, to whom candidates for this degree must submit their proposed courses of study for approval before the end of October of each year.

The DEGREES OF CIVIL ENGINEER AND OF MECHANICAL ENGINEER are conferred on Bachelors of Philosophy who have taken the first degree in Engineering study, and who pursue a higher course under the direction of the Governing Board of the Sheffield Scientific School for

at least two years, sustaining a final examination, and giving evidence of their ability to design important constructions and to make the requisite drawings and calculations. The fee for graduation is five dollars.

FELLOWSHIPS

Five FELLOWSHIPS yielding four hundred dollars each, not exempting the holders from charges for tuition, are open to graduates of all colleges; but preference is given to those who have already spent at least one year in graduate study, and have shown capacity for original work.

The BULKLEY FELLOWSHIP IN AMERICAN HISTORY was established in 1901 by the gift of ten thousand dollars from Mr. Jonathan Bulkley, of the class of 1879, and other members of his family, in memory of Helena Perry Bulkley. The income, four hundred dollars, is awarded annually to a student of high character and marked ability, who will pursue graduate studies in American History or Administration under the direction of the Professors of History.

The HENRY C. ROBINSON FELLOWSHIP was founded in 1900 in the name of Mrs. Mary Robinson Cheney, of Hartford, Conn., and her sister, Miss Eliza Robinson, in memory of their uncle, Henry C. Robinson, of the class of 1853, by the gift of five thousand dollars. The income is awarded annually to a student of the Graduate School, selected on the ground of ability and attainments.

The JOHN ADDISON PORTER MEMORIAL FELLOWSHIP was established in 1901 by Mrs. Josephine S. Porter, in memory of her husband, Professor John Addison Porter, of the class of 1842, and of her son, John Addison Porter, of the class of 1878, by the gift of ten thousand dollars. The income is awarded annually to a graduate of Yale College or of the Sheffield Scientific School, selected for distinguished excellence and promise in the Department of English.

The LOOMIS FELLOWSHIP in Physics was established in 1902, by Professor Francis E. Loomis, class of 1864, Yale College, by the gift of ten thousand dollars. This Fellowship is open to the graduates of the Scientific and Academic Departments of Yale University, and to graduates of other Universities who have spent at least one year in the study of Physics in the Graduate School of Yale. It is granted to the candidate who passes the best competitive examination in Physics (descriptive, mathematical, and laboratory practice). The holder of this fellowship must be a candidate for the degree of Doctor of Philosophy, and must make Physics his chief study.

The YALE ALUMNI ASSOCIATION OF CALIFORNIA FELLOWSHIP of three hundred dollars is given to a graduate of one of the California Universities, pursuing studies at Yale in the Graduate School. The incumbent is selected by the Association.

The following Fellowships are, by the terms of the donations, open only to graduates of Yale College :

The DOUGLAS FELLOWSHIP.

The SOLDIERS' MEMORIAL FELLOWSHIP. . .

The SILLIMAN FELLOWSHIP.

The JOHN SLOANE FELLOWSHIP. .

The SCOTT HURTT FELLOWSHIP. .

The ELLEN BATTELL ELDRIDGE FELLOWSHIPS (two). .

The MACY FELLOWSHIP. .

The LARNED FELLOWSHIPS (three). .

The FOOTE FELLOWSHIPS (three).

The CUYLER FELLOWSHIP.

SCHOLARSHIPS

TWENTY SCHOLARSHIPS, yielding one hundred dollars each, are open to graduates of all colleges.

The following Scholarships are open only to graduates of Yale College :

The CLARK SCHOLARSHIPS, and

The W. W. DE FOREST SCHOLARSHIP.

THE DANIEL C. EATON GRADUATE SCHOLARSHIP IN BOTANY is endowed with the income of a fund of two thousand dollars given by Mrs. Eaton in commemoration of her husband, the late Professor Daniel C. Eaton. This scholarship is open for competition to members of the Senior classes in the Academical and Scientific Departments, on conditions to be prescribed by the Governing Board of the Sheffield Scientific School.

SIX SHEFFIELD SCHOLARSHIPS of \$100 each (covering the charges for tuition) are awarded, on application, to those members of the graduating class of the Sheffield Scientific School who have attained high proficiency in the special studies of their respective courses, and who desire to spend one or more years in graduate study in the School. Each scholarship will be available for one year only. Application for these scholarships must be made in writing on or before June 1st to the head of the department to which the student belongs, with a statement as to the character of the graduate study to be pursued.

Candidates for appointment to Fellowships and Scholarships should send their applications, accompanied by letters of recommendation and other evidence of the excellence of their work already accomplished, to the Dean, Professor Andrew W. Phillips, as soon as possible after March 1.

The limit for all applications is April 15.

THE ARTHUR TWINING HADLEY SCHOLARSHIP yields an income of \$225 a year, which sum is awarded annually to one or more students of the University, to assist in the publication of meritorious theses or other results of investigation.

The sum of fifty dollars is appropriated by the University towards defraying the cost of publication of each thesis submitted for the degree of Doctor of Philosophy, which is recommended for such purpose by the expert

readers of the thesis in question, provided such thesis is actually published, in separate form, by the first day of January following the graduation of the candidate, and that fifty copies have been presented to the University.

PRIZES

The JOHN A. PORTER PRIZE, of the value of two hundred and fifty dollars, established by the Kingsley Trust Association in 1872, is offered for the best English Essay on a prescribed subject. Competing essays must be handed in at the close of the Spring recess, and the award will be announced on Commencement Day. Any person who has been pursuing a regular course for a degree in any Department of the University during the whole of the current College year, may compete for this prize. If none of the competing essays is of sufficient merit, the prize will not be awarded.

The COOK PRIZE IN POETRY, of the value of fifty dollars, is offered by Professor Cook for the best unpublished poem. Competition is open to students of the University in all departments. If none of the competing poems is of sufficient merit, the prize will not be awarded. Before receiving the prize, the winner must print the successful poem in a manner acceptable to the donor. The poems, each of which should be signed by an assumed name, and accompanied by a sealed envelope containing the writer's full name, are due on April 1, and may be handed in at the Chittenden Library.

The JACOB COOPER PRIZE IN GREEK PHILOSOPHY, established in 1900 by the gift of five hundred dollars from Professor Albert S. Cook, is awarded in any year by the departments of Greek and Philosophy to such student of the University, being a person of high attainments and ability, as shall pass the best examination in the *Metaphysics* and *Organon* of Aristotle, and shall submit the best thesis

upon some topic drawn from one of these works and announced publicly at a convenient time in advance.

The **GEORGE WASHINGTON EGLESTON HISTORICAL PRIZE**, the income of one thousand dollars, founded by George Washington Egleston, Esq., of Eardisley, Herefordshire, England, will be awarded to any student of the University who shall during the ensuing year, by research, discover any new fact or facts relating to American History ; or shall from existing data bring to bear any information, or criticism, sufficiently notable to be useful from a literary point of view.

COURSES OF INSTRUCTION

Courses marked with an asterisk (*) are undergraduate courses ; they are open to graduate students who have the consent of the instructor and the approval of the Faculty.

The number of hours stated means, when not otherwise specified, hours of exercise, lectures, or recitations, each week through the year.

For **UNIVERSITY PRIVILEGES**, including information respecting **RESEARCH CLUBS, LIBRARIES, LECTURES, CONCERTS**, etc., see Index.

A. LANGUAGE, LITERATURE AND THE ARTS

I. CLASSICAL AND INDO-IRANIAN PHILOLOGY

TRACY PECK, LL.D.	HENRY P. WRIGHT, Ph.D., LL.D.
BERNADOTTE PERRIN, Ph.D., LL.D.	THOMAS D. SEYMOUR, LL.D.
EDWARD P. MORRIS, L.H.D.	HENRY R. LANG, Ph.D.
THOMAS D. GOODELL, Ph.D.	E. WASHBURN HOPKINS, Ph.D., LL.D.
HORATIO M. REYNOLDS, M.A.	HANNS OERTEL, Ph.D.
JAMES W. D. INGERSOLL, Ph.D.	CHARLES H. WELLER, Ph.D.
CECIL K. BANCROFT, B.A.	CHARLES U. CLARK, Ph.D.
PAUL V. C. BAUR, Ph.D.	HENRY B. WRIGHT, Ph.D.
SAMUEL E. BASSETT, B.A.	

Students in this department have at all hours unrestricted use of the library of the department. This is in Phelps Hall, near the classical seminary rooms, in a large and well-lighted apartment supplied with tables and private lockers. It contains nearly four thousand volumes, and additions are made each year, so that the student finds here practically everything needed for ordinary work in the courses in classical philology, except some periodicals and expensive illustrated works, which are accessible in the University Library.

Special purchases of books will be made for students who are carrying on investigations, either in connection with their theses or otherwise.

The CLASSICAL CLUB, consisting of the instructors and students in the department, meets in the library room every Saturday evening, to hear reports and papers in the field of classical philology, or to read and discuss the work of some Greek or Latin author. During the year 1905-1906 the club will read from Suetonius and the plays of Euripides.

Graduate students of this University who are approved by the classical instructors are admitted without charge to the American Schools of Classical Studies at Athens and in Rome.

Attention is called to the following allied courses in other departments :

Ancient History, Course VIII, 44.

Biblical and Patristic Greek, Courses II, 41-44.

1 *Classical Seminary.*

2 hrs.

The members are expected to read French and German freely, and to have read widely in Greek and Roman Literature.

Professor MORRIS :—

(a) *Catullus.*

Criticism and interpretation. Students who desire to take this course should read Catullus rather carefully in preparation for the work, using Merrill's or Riese's edition.

Professor GOODELL :—

(b) *Aristoxenos on Rhythm.*

The work will center in the endeavor to make an edition of the extant fragments, with a translation, a lexicon of technical terms, and a complete collection of passages in later writers, including the Latin grammarians, that show traces of his doctrine. A provisional text of the fragments and a provisional translation, prepared and arranged in part by the work of the seminary in 1903, will be made the starting point. Several lectures will be given in the course of the first half-year as an introduction.

Professor OERTEL :—

2 *Readings in Modern Philological Literature.* 1 or 2 hrs.

Digests of a number of important modern philological works will be prepared and presented by members of the class.

GREEK

Professor PERRIN :—

3 *Thucydides.*

1 hr.

Practical exercises in the exhaustive critical study of portions of the text of Thucydides, following lectures on the MSS. and bibliography of this author. An introduction to the more advanced work of the Classical Seminary in textual criticism and interpretation.

Professor SEYMOUR :—

4 *Greek Epic Poetry.* 3 hrs.

Introduction to the critical study of Homer. Lectures on the history of Homeric study, Epic poetry, the composition and transmission of the poems, life in the Homeric times in its various aspects; Homeric language and verse. These are followed by a familiar but critical interpretation (and exercises in interpretation and criticism) of portions of the *Odyssey*, and of the later Greek epics.

[Monday and Friday, 8.00–9.30 A. M., 23 Phelps Hall.]

5 *Plato.* 3 hrs.

The *Republic*, and portions of the other dialogues which are most important for its elucidation.

[Tuesday and Thursday, 8.00–9.30 A. M., 23 Phelps Hall.]

[6 *The Greek Orators.* 3 hrs.

A study of Greek Oratory, beginning with the orations of Isaeus, and including some of the private orations of Demosthenes, with reference to Athenian life and law, as well as to the development of Attic eloquence.

Omitted in 1905–1906.]

[7 *Aeschylus.* 3 hrs.

Omitted in 1905–1906.]

Professor GOODELL :—

8 *Greek Composition.* 1 hr.

Exercises in translation and free composition. The weekly session lasts from an hour to an hour and a half.

[Tuesday, 11.30 A. M., 15 Phelps Hall.]

[9 *Sophocles.* 3 hrs.

Reading of the seven extant plays with special attention to the artistic form, including style, treatment of the myths, management of the action, use of meters, and the like. Considerable practice is given in reading Greek verse aloud.

Omitted in 1905–1906.]

Professor REYNOLDS :—

- 10 *Aristotle's Poetics. Literary Criticism in Ancient Times.* 1 hr.
Interpretation of the *Poetics* and parts of the *Rhetoric*, with selections from Plutarch, Pseudo-Longinus, and Lucian.
- 11 *Late Greek Poetry.* 1 hr.
A survey of Alexandrian and later Greek poetry. The mimes of Herondas, selections from the Anthology and from the hymns of Callimachus, and other fugitive poetry.

Professor OERTEL :—

- [12 *Greek Dialects, and Comparative Grammar of Greek Sounds and Inflections.*
Omitted in 1905-1906.]

Dr. WELLER :—

- 13 *Pausanias.* 2 hrs.
A study of the topography and antiquities of the principal sites of archæological interest in Greece outside of Athens, based on Pausanias.
- [14 *Xenophon.* 2 hrs.
A brief survey of Xenophon's writings and the critical reading of parts of the *Anabasis*. Study of special topics such as Xenophon's life, style, diction, the route of "the Ten Thousand," Greek military equipment and tactics.
Omitted in 1905-1906.]

Mr. BASSETT :—

- [15 *Modern Greek.* 1 hr.
Practice in reading and speaking the colloquial language. Wied's *Praktisches Lehrbuch der neugriechischen Volkssprache* is used as a text-book, but constant reference is made to Thumb's *Handbuch der neugriechischen Volkssprache*.
Omitted in 1905-1906.]

16 *Greek Epigraphy.* 1 hr.

The object of the course is to give the student a general survey of the development of the Greek alphabet, practice in reading inscriptions from squeezes, and an acquaintance with the more important Attic inscriptions.

Professor PERRIN :—

*17 *The Testimonies of Aristophanes, Thucydides, and Plutarch to the Career of Nicias.* 2 hrs.

A study of literary forms (Old Athenian Comedy ; History ; Biography) and historical tradition.

The *Wasps* of Aristophanes is read entire, and the other comedies are assigned for investigation ; all the portions of Thucydides also which bear on the subject are collected and discussed. Plutarch's *Life of Nicias* is read and analyzed.

Professor SEYMOUR :—

*18 *Aeschylus and Pindar.* 2 hrs.

The *Persians* and the *Agamemnon* of Aeschylus are read with special attention to the dramatic structure of the two plays. Later, the principal extant odes of Pindar are read, and a brief sketch of Greek lyric poetry is given.

[Monday and Friday, 5.00 P. M., 23 Phelps Hall.]

[*19 *Plato and Aristotle.* 2 hrs.

The *Phaedo* of Plato and the *Nicomachean Ethics* of Aristotle. Omitted in 1905-1906.]

[*20 *The Idylls of Theocritus.* 1 hr.

Omitted in 1905-1906.]

*21 *Hellenistic and Patristic Greek.* 2 hrs.

A philological study of selections from the *Septuagint*, St. Paul's *First Epistle to the Corinthians*, and other documents of the early Christian church.

[Wednesday, 4.00-6.00 P. M., 23 Phelps Hall.]

Professor HOPKINS :—

*22 *Greek Ethnology.* 2 hrs.

Selections from classical writers, giving studies of foreign life, institutions, and religion.

Professor REYNOLDS :—

*23 *Homer.* 2 hrs.

Reading of the entire *Odyssey*. The course is intended for the general student of literature.

[*24 *Euripides.* 2 hrs.

Five or six plays are read with reference to Euripides' poetic and dramatic quality. Discussion of the poet's relation to his own times; his style, metres, dramatic innovations, and influence on the Roman and modern dramatists. Occasional lectures.

Omitted in 1905-1906.]

[*25 *Lucian.* 2 hrs.

A general reading-course in prose, with discussion of the life and times of Lucian and of his influence upon modern literature. The *Dream*, *Charon*, *Timon*, *Angler*, and *True History* are read, with many minor pieces, including the *Dialogues of the Gods* and *Dialogues of the Dead*.

Omitted in 1905-1906.]

Mr. BASSETT :—

*26 *Greek Composition.* 2 hrs.

The course will include a review of Greek syntax, retroversion from the Greek, studies in the order of words in Greek, and individual criticism of exercises previously prepared.

[Monday and Friday, 3.00 P. M.]

LATIN

LATIN LITERATURE

Professor PECK :—

27 *Pliny (Letters and Panegyric) and Tacitus (Dialogus de Oratoribus).* 2 hrs.

Critical study, the first term; rapid reading, the remainder of the year.

[Saturday, 9.30-11.15 A. M., 21 Phelps Hall.]

[28 *Lucretius.* 2 hrs.

Omitted in 1905-1906.]

Professor MORRIS :—

29 *Plautus.* 2 hrs.

Lectures introductory to the study of Plautus, followed by a rather careful reading of two or three plays and a more rapid reading of others. Students should have the complete Teubner text (Goetz-Schoell).

30 *Interpretation and Criticism.* 1 hr.

Exposition and illustration of the principles of interpretation and text-criticism, with practice in the use of the standard critical editions of eight or ten authors.

Professor OERTEL :—

[31 *Selections from Latin Authors on the Latin Language.*

Omitted in 1905-1906.]

Assistant Professor INGERSOLL :—

[32 *Latin Comedy.* 2 hrs.

About ten plays of Plautus, three or four of Terence, and the principal fragments of the other writers of Latin comedy. A course in rapid reading, designed to supplement the critical work on Plautus in other courses.

Omitted in 1905-1906.]

Assistant Professor CLARK :—

[33 *Introduction to Text Criticism.* 2 hrs.

Reconstruction of the text of Ammianus Marcellinus in the light of Wilhelm Meyer's Law and on the basis of new collations.

Omitted in 1905-1906.]

34 *Latin Palaeography.* 2 hrs

Facility in reading and dating MSS. is acquired by systematic study of the rich University collections of facsimiles. The origin and the bearing upon text criticism of MS. errors are constantly observed. The development of late Latin and medieval literatures is taken up in detail.

Professor PECK :—

*35 *Hexameter Poetry.* 2 hrs.

Development of metrical types and literary styles, with readings in Ennius (the *Annales*), Lucretius, Vergil (the *Georgics*), and Horace (the *Epistles*).

[Tuesday and Thursday, 10.30 A. M., 21 Phelps Hall.]

- [*36 *The Character and Reign of Tiberius.* 2 hrs.
Tacitus (*Annals*, i-vi), Suetonius (*Tiberius*) and Velleius Paterculus. The characteristics of "Silver" Latin.
Omitted in 1905-1906.]

- [*37 *Roman Oratory.* 2 hrs.
Cicero (*Brutus*), Quintilian (*x* and *xii*), and Tacitus (*Dialogus*).
History and character of Roman oratory.
Omitted in 1905-1906.]

Professor PECK and Professor H. P. WRIGHT :—

- *38 *Juvenal, Martial, and Pliny's Letters.* 2 hrs.
Roman private life ; literary and social conditions at Rome in the early empire.
[Tuesday and Thursday, 9.30 A.M., 11 Phelps Hall.]

Professor MORRIS :—

- *39 *Vergil.* 2 hrs.
An introduction to Vergil, intended to give students who expect to teach Latin an acquaintance with the best editions and commentaries and with works on special topics.

Assistant Professor INGERSOLL :—

- *40 *Latin Literature.* 2 hrs.
A general survey of the whole field. Lectures, illustrative readings, and direction of the student's private reading.
[Monday and Friday, 4.00 P. M. (second term, 2.00 P. M.), 12 Phelps Hall.]

- *41 *Latin Drama.* 1 hr.
One play of each of the extant Latin dramatists (Plautus, Terence, and Seneca) will be read, as the basis for a survey of the Latin drama as a whole.
[Saturday, 9.30 A. M., 12 Phelps Hall.]

- [*42 *Roman Law.* 2 hrs.
An elementary and general course, for the classical student or the student of law.
Omitted in 1905-1906.]

Mr. BANCROFT :—

- *43 *Ovid.* 2 hrs.
The *Fasti* and portions of the other works.
[Monday and Friday, 2.00 P. M., 19 Phelps Hall.]

Assistant Professor CLARK :—

- [*44 *Latin Literature of the Early Middle Ages.* 2 hrs.
This course aims to follow the rise and development of Christian Latin Literature and the history of culture, up to the Caroline period. Linguistic phenomena and critical method are constantly kept in view. Ability to read French and German is required. Lectures accompany the rapid reading of several texts, including selected letters of Jerome, Gregory of Tours, Bede, and Einhard.
Omitted in 1905-1906.]

- *45 *Latin Literature of the Late Middle Ages.* 2 hrs.
This course covers the period from Charlemagne to Dante. While complementary to 44, and similar to it in general scope and method, it lays especial stress on the relationship of the Latin and the modern literatures and on the transitional character of medieval culture. Among the works read are the *Chronicon Novaliciense*, Liutprand of Cremona, the *Waltharius*, *Ruodlieb*, *Visio Tnugdadi*, and Dante's *de Monarchia* and *de Vulgari Eloquentia*.

THE LATIN LANGUAGE

Professor PECK :—

- 46 *Latin Epigraphy.* 2 hrs.
Study of such inscriptions (including coins) as illustrate the development of the language, and private and public antiquities. Egbert's *Introduction* will be the basis of work, with constant use of the *Corpus Inscriptionum Latinarum*.
[Wednesday, 9.30-11.15 A. M., 21 Phelps Hall.]

- [*47 *Early Latin.* 2 hrs.
Study of inscriptions and of the ante-classical literature, based on Allen's *Remnants of Early Latin*, Merry's *Fragments* and Smith's *Selections*.

The course is largely philological and critical, dealing with the development of forms, constructions, and literature, and it is especially commended to those who expect to teach Latin.

Omitted in 1905-1906.]

Professor MORRIS :—

[48 *Latin Syntax.* 2 hrs.

Introductory lectures on the history of syntactical study and on the principles and methods of investigation ; discussion of syntactical systems in grammars and text-books. The greater part of the year will be spent upon a study of the ablative constructions, for which each member of the class will collect about a thousand examples.

One session weekly of two hours in length, which may be extended to three hours.

Omitted in 1905-1906.]

Professor LANG :—

[49 *Low Latin.* 1 hr.

The aim of this course is to give an historical account of the popular speech of Rome and of the Roman provinces, and also an outline of its grammar and syntax, as disclosed by classical Latin, the testimony of the Latin grammarians, inscriptions, medieval documents, and the consensus of the Romance languages.

The following Low Latin text is used : P. Geyer, *Itinera hierosolymitana saeculi iii-viii* (vol. 39 of *Corpus Scriptorum Ecclesiasticorum Latinorum*), Vienna, 1898.

Omitted in 1905-1906.]

Professor OERTEL :—

50 *The Italic Dialects and Comparative Grammar of Latin Sounds and Inflection.* 2 hrs.

Text-books: Buck's *Grammar of Oscan and Umbrian* (Ginn and Co., 1904) and Sommer's *Handbuch der lateinischen Laut- und Formenlehre* (Heidelberg, 1902).

51 *Practice in Writing Latin Prose (Advanced course).* 2 hrs.

Text-books: Cicero's *Laelius* and Menge's *Repetitorium der Lateinischen Syntax und Stylistik* (7th ed., 1900).

- 52 *A Study of Latin Versions from the Greek.* 2 hrs.
Roman Practice and Theory of translation.

Assistant Professor CLARK :—

- *53 *Latin Composition.* 2 hrs.

This course is designed for undergraduates who plan to teach the Classics. It is sufficiently exhaustive to serve as final for men who wish to go into the work of teaching immediately after graduation; but it is subsidiary to course 51, which should be taken as its complement. Text-book work is supplemented by original composition and conversation.

[Monday and Friday, 3.00 P. M.]

CLASSICAL ARCHAEOLOGY

Assistant Professor BAUR :—

- [*54 *Greek Art—I. Sculpture.* 2 hrs.

Lectures and quizzes by the instructor. Special study of the literary sources by the students.

Omitted in 1905-1906.]

- *55 *Greek Art—II. The Lesser Arts.* 2 hrs.

This course treats briefly of Greek painting, ceramics, terracottas, bronzes and other metal work, coins and gems.

- 56 *Greek Architecture.* 2 hrs.

The various forms of building-construction are successively examined in informal lectures, supplemented by occasional reports from members of the class.

- 57 *Topography and Monuments of Athens.* 2 hrs.

A combination of the historical and the strictly topographical methods of treatment is adopted. Those who take this course should be provided with the Teubner text of *Pausanias*.

- 58 *Archaeological Exercises.* 2 hrs.

Exercises in the interpretation of archaeological monuments, as illustrating classic life and literature. The monuments are selected largely with reference to the courses offered in Greek and Latin authors. No preparation is required.

- *59 *Roman and Etruscan Art.* 2 hrs.

This course includes such subjects as Roman architecture, Graeco-Roman sculpture, topography and monuments of Rome and of Pompeii ; the domestic arts, such as household utensils, glass, coins, frescoes, mosaics, textiles, terra-cottas. Select topics are investigated by the members of the class.

INDO-IRANIAN PHILOLOGY

Professor HOPKINS :—

- *60 *Elementary Sanskrit.* 2 hrs.

Instruction in Sanskrit, beginning with Whitney's *Sanskrit Grammar*, and passing on to Lanman's *Reader*.

The elementary course in Sanskrit is designed especially for classical students, but it may be taken with profit by any who intend to become teachers, and it is indispensable for those who pursue studies in the comparative Grammar of Greek and Latin. By the end of the year the student will have read portions of the classical and Vedic selections in Lanman's *Reader*, and will have attained such familiar acquaintance with Sanskrit grammatical forms and syntactical structure, as greatly to aid his comprehension of parallel phenomena in other Aryan languages.

[Tuesday and Thursday, 3.00 P. M.]

- 61 *Advanced Sanskrit.* 2 hrs.

Selections from the Rig-Veda and Brahmanic texts.

This course is intended for those that have had already at least one year's instruction in Sanskrit. The first half of the year is occupied with reading selections from the Vedic Hymns. The special topic of the second term's reading is the philosophical portions of the first Brahmanic works and Upanishads, the earliest Aryan prose.

[Tuesday and Thursday, 4.00 P. M.]

- 62 *History of Sanskrit Literature.* 2 hrs.

This course consists in a review of Vedic and classical Sanskrit literature from the earliest times to the Puranic period, with extracts to illustrate the various phases of literary development. This course forms also a reading exercise parallel to that in Advanced Sanskrit.

[Wednesday, 4.00 P. M.]

63 *Pali Language and Literature.* 1 hr.

Intended for those who desire to begin the study of Buddhistic scriptures. Pali is easy for advanced Sanskrit students, and offers much of interest in respect of literature and religion.

[64 *Avestan Language and Literature.*

For advanced students of Sanskrit.

Omitted in 1905-1906.]

65 *Lectures on Comparative Religion.* 1 hr.

These lectures are in two parts. The first part takes up the study of religion from the comparative point of view, treating of the underlying principles of religion as shown in the religious phenomena of different nations and races. The second part consists of lectures on special religions, illustrating the principles explained in the first part. They are open to all Graduate students, and to members of the Divinity School, and of the Junior and Senior classes of the College.

[Monday, 3.00 P. M.]

COMPARATIVE GRAMMAR, PHONETICS, AND LINGUISTICS

Professor HOPKINS :—

[66 *Introduction to Comparative Syntax.* 1 hr.

This course consists in an analysis of the syntactical facts presented by the Aryan languages, particularly Sanskrit, Greek, Latin, and early German. It is intended especially for students of these languages who desire a more thorough acquaintance with the problems of comparative syntax. To solve these problems a knowledge, if not of the Sanskrit language, at least of Sanskrit syntactical phenomena is necessary, and the lectures are planned accordingly with a view to explain these phenomena to those who have not studied Sanskrit as well as to those who have done so.

Omitted in 1905-1906.]

Professor OERTEL :—

67 *Phonetics.* 1 hr.

A general and rather elementary introduction to Phonetics, based on a study of the English, French, and German sound systems, and intended to furnish a basis both for the study of the historical phonology and for the practical teaching of the various languages.

68 *Eighteen Lectures on Indo-European Phonology.*

An outline of the most important facts of Indo-European phonology, viz: the vowel-system, the problems of ablaut, the gutturals, and accent.

69 *Linguistics.*

2 hrs.

An introduction to the scientific study of linguistic development intended for students of both the classics and the modern languages who wish to become acquainted with the general principles and chief problems of linguistic science, modern methods of research, etc.

II. SEMITIC LANGUAGES AND BIBLICAL LITERATURE

EDWARD L. CURTIS, Ph.D., D.D. FRANK K. SANDERS, Ph.D., D.D.
BENJ. W. BACON, D.D., Litt.D., LL.D. FRANK C. PORTER, Ph.D., D.D.
CHARLES F. KENT, Ph.D. CHARLES C. TORREY, Ph.D., D.D.
FREDERICK LENT, M.A. SHIRLEY J. CASE, M.A.

Connected with the department are the Seminary rooms, the Reference Libraries, the Special Collections, and the Semitic and Biblical Club.

The SEMINARY ROOM in 9 Fayerweather Hall adjoins the two recitation rooms used by the department. It contains a good reference library in Biblical Literature, and can be used for purposes of study at all times.

A REFERENCE LIBRARY, available for students, situated very near to the special library of the department proper, is the Trowbridge Reference Library of the Divinity School. It contains more than 3,000 carefully selected volumes, and is particularly rich in works of reference for Biblical study.

The SALISBURY COLLECTION of Oriental manuscripts, books and works of reference, the library of the American Oriental Society, the collection of rare and valuable Arabic manuscripts, made by Count Landberg, acquired recently for Yale University through the munificence of Morris K. Jesup, Esq., of New York City, and the well-stocked Semitic sections of the general Library, furnish exceptional advantages and opportunities for independent research to the student of Semitic literature.

The SEMITIC AND BIBLICAL CLUB, composed of the instructors, the students who are candidates for an advanced degree, and others who are interested in the work, holds stated semi-monthly meetings, at which papers on subjects of interest to Biblical students are presented and discussed.

The BIBLICAL RESEARCH CLUB meets for discussions of a semi-popular character on Biblical subjects.

HEBREW

Professor CURTIS :—

- 1 *Elementary Hebrew.* 4 hrs.

The year's work includes a mastery of the elements of Hebrew and the translation of Genesis.

- [2 *The Book of Job.* 1 hr.

The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.

Omitted in 1905-1906.]

- 3 *Selections from Proverbs, and the Five Megilloth.* 1 hr.

The grammatical and historical exegesis of the Hebrew text. Lectures and recitations.

- 4 *Selections from the Psalter.* 2 hrs. 1st term.

The grammatical and historical exegesis of the text, with attention to New Testament interpretation and homiletical application.

- 5 *The Book of Isaiah.* 2 hrs. 2d term.

The grammatical and historical exegesis of the Hebrew text.

- 6 *The Books of Chronicles.* 1 hr.

The grammatical and historical exegesis of the Hebrew text.

Professor KENT :—

- 7 *Hebrew Seminary.* 2 hrs.

A knowledge of Hebrew, Hellenistic Greek, and German is required. In 1905-1906 the syntactical and textual problems of Jeremiah, Ezekiel, and Isaiah 40-66 will be considered.

[Friday, 2.00-4.00 P. M.]

Mr. LENT :—

- *8 *Hebrew (elementary course).* 2 hrs.

A study of the elements of the Hebrew language in connection with the reading of Genesis i-viii, and of selected passages of easy Hebrew.

[Tuesday and Thursday, 5.00 P. M.]

- *9 *Advanced Hebrew [after B 5].* 2 hrs.

Reading of the Books of Samuel and a thorough review of the elements of Hebrew grammar and syntax, followed by practice in rapid sight reading.

[Tuesday and Thursday, 4.00 P. M.]

COGNATE SEMITIC LANGUAGES

Professor TORREY :—

- [10 *Elementary Arabic.* 2 hrs.

The elements of Arabic grammar, including exercises in writing. Rapid reading of easy prose extracts. The text-books used will be Socin's *Grammar* (2d edit.) and Brünnow's *Chrestomathy*.

Omitted in 1905-1906.]

- 11 *The Koran.* 2 hrs.

Reading of selected suras, with a supplementary study of the life of Mohammed.

- [12 *The Arabic Historians.* 2 hrs. 1st half-year.

The reading of Ibn Hishâm's account of the battle of Bedr.

Omitted in 1905-1906.]

- [13 *Arabic Poetry.* 2 hrs. 2d half-year.

The reading of selections from Nöldeke's *Delectus Veterum Carminum Arabicorum*.

Omitted in 1905-1906.]

- 14 *Elementary Syriac.* 2 hrs.

The text-book used is Brockelmann's *Syrische Grammatik*.

Those who intend to make a thorough study of the New Testament or of early Church history will find this course valuable.

- 15 *The Old Syriac Gospels.* 2 hrs.

The reading of a considerable portion of The Lewis Palimpsest (*The Four Gospels in Syriac*; Cambridge, 1894), with attention to both linguistic and critical phenomena. Students who have taken course 14, or its equivalent, are qualified to enter this course.

- [16 *Biblical and Palestinian Aramaic.* 2 hrs. 2d term.

Reading of the Aramaic portions of Daniel and Ezra, and other specimens of early Palestinian Aramaic. Marti's *Grammatik der Biblisch-Aramäischen Sprache* and Dalman's *Aramäische Dialektproben* will be used.

Omitted in 1905-1906.]

- [17 *Elementary Assyrian.* 2 hrs.

The text-books used are Lyon's *Assyrian Manual*, 2d edition, and Delitzsch's *Lesestücke*, 4th edition, 1900.

Omitted in 1905-1906.]

- 18 *Babylonian and Assyrian Historical Texts.* 2 hrs.

Texts are read in the cuneiform or in transliteration, according to the needs of the class.

- 19 *North Semitic Inscriptions.* 1 hr.

The Moabite stone; the Siloam inscription; the Zenjtrli monuments, and other Old Aramaic remains; selected Phoenician and Palmyrene inscriptions; coins with Old Semitic legends.

- 20 *Elementary Ethiopic.* 1 hr.

The elements of Ethiopic, using Praetorius's *Äthiopische Grammatik* and Bachmann's *Lesestücke*.

Advanced courses in Classical and Palestinian Syriac, Old Babylonian, Ethiopic, and Sabaeen and Minaean Inscriptions, will be given according to the needs of students. Instruction in modern colloquial Arabic (Syrian dialect) will be offered to those who intend to spend a year or more in the American School in Palestine.

SEMITIC PHILOLOGY AND ARCHAEOLOGY

Professor TORREY :—

- [21 *General Introduction to Semitic Philology.* 2 hrs. 1st term.

A general view of the Semitic languages and peoples, including a brief survey of their literatures. No previous knowledge of the Semitic languages is required for this course, though some acquaintance with at least the Hebrew language is desirable.

Omitted in 1905-1906.]

- 22 *The History of Old Semitic Art.* 1 hr.

The fine arts in Babylonia and Assyria. Hittite monuments. Phoenician art, and its sources. Remnants of Palestinian art : the Hebrews ; the Western Aramaic peoples. South Arabian monuments.

Illustrated lectures, supplemented by prescribed reading. Babelon's *Manual of Oriental Antiquities* should be in the hands of the student. A good reading knowledge of French and German is indispensable.

Professor KENT :—

- [23 *The Discovery and Decipherment of the Ancient Semitic Inscriptions.* 1 hr. 1st term.

A review of the history of excavations in ancient Persia, Assyria, Babylonia, and Syria, with a study of the problems and methods of the modern excavator. A survey of the different forms and types of Semitic inscriptions and the history of their decipherment.

Omitted in 1905-1906.]

BIBLICAL LITERATURE

Professor CURTIS :—

- 24 *Ancient Traditions and History of the Jewish People.* 1 hr.

Studies in history and archaeology with the view of determining the meaning and historical value of the Biblical records.

- 25 *Analysis and Exposition of Isaiah, Jeremiah, and Ezekiel.*
(English Bible.) 2 hrs. 2d term.

- [26 *Analysis and Exposition of the Twelve Minor Prophets and Daniel.* (English Bible.) 2 hrs. 2d term.
Omitted in 1905-1906.]
- 27 *Old Testament Introduction.* 1 hr.
A brief survey of the history of the canon, text, and versions, followed by special introduction to the Hexateuch and remaining Old Testament books. Lectures.
- [28 *Problems of Hexateuchal Criticism.* 1 hr. 2d term.
A consideration of the problems of Hexateuchal criticism.
Omitted in 1905-1906.]

Professor PORTER :—

- 29 *Theology of the Pre-exilic Prophets.* 2 hrs. 1st term.
A course of lectures on the religious and ethical conceptions of Amos, Hosea, Micah, Isaiah, and Jeremiah, based on a critical use of the books that bear their names, and aiming to set forth their individuality and their significance in the history of religion. Special attention will also be given to the nature of the prophetic consciousness.
- 30 *The Theology of Judaism.* 2 hrs. 2d term.
The course consists of lectures on the religious history of the Jews from the Exile to the rise of Christianity. The religious significance of outward conditions and events will be discussed, and the ruling ideas and special problems of the literature of the period, including the prophets during and after the Exile, the Law, the Psalms, the Wisdom writings, the books of History and Story, and the Apocalypses, will be studied. After this historical survey, the attempt will be made to trace in outline the history of some important doctrinal or religious conceptions throughout the Old Testament period.
- 31 *Biblical Theology of the New Testament.* 3 hrs. throughout the year.
The course consists of lectures with supplementary reading. The central aim of the course is the right understanding and estimation of the Teaching of Jesus. This is studied on the basis of a critical comparison of the Gospels, and with reference

to its relation to the law and prophets of Israel, and to the various tendencies and problems of contemporaneous Jewish thought. The Apostolic Teaching is then studied, with the effort to define the common faith of primitive Christianity, the distinctive character and influence of the thought of Paul, and the influences and movements of the early post-apostolic age.

- 32 *Johannine Theology.* 1 hr. throughout the year.

A reading of the Johannine Literature, with special attention to its ruling religious conceptions and their historical origin and significance; their relation to the Teaching of Jesus, to Paulinism and other early Christian tendencies, and to Hellenistic Judaism.

- 33 *The Apocalyptic Literature.* 1 hr. throughout the year.

Lectures with prescribed readings on the principal Jewish and Christian Apocalypses, the nature of this literature, the question of foreign influence, Persian or Greek, in its production, and its significance in the beginnings of Christianity.

Professor SANDERS :—

- [34 *Hebrew Wisdom Literature.* 2 hrs. 2d half-year.

An investigation (on the basis of the English translation) of the forms of Hebrew reflective literature and a comparison with the similar literature of other nations. The course includes an interpretation both of the Biblical books of Proverbs, Ecclesiastes, and Job, and of the apocryphal books of Ecclesiasticus and the Wisdom of Solomon, and a consideration, both of the wisdom writers as a class and of the importance of this literature in the history of religious thought.

Omitted in 1905-1906.]

- 35 *The English Bible.* 1 hr.

The history of the gradual growth of the English Bible from its earliest beginnings to the American Revision of 1900. This includes a discussion of the history of the collection and arrangement of the Biblical books and of the various versions which influenced the English version. Upon these results is based an investigation of the best methods of interpreting and teaching each department of Biblical Literature.

[Thursday, 2.00 P. M.]

- [36 *The Gospels.* 1 hr.
A study of the Gospels with especial reference to their origin and interpretation and to the classification and consideration of the teachings of Jesus.
Omitted in 1905-1906.]

Professor KENT :—

- *37 *Biblical Literature and History.* 3 hrs.
A general course intended for students who wish to gain a definite, systematic knowledge of the literature of the Bible on the basis of the best English translations, and to become acquainted with the significant political, social, and religious facts and institutions which constitute its historical background.
Text-books, supplemented by lectures and syllabi, with detailed references to the standard literature on each subject.
[Monday, Wednesday, and Friday, 9.30 A. M.]
- 38 *Historical Origin of Christianity.* 2 hrs.
Study of the origin, history, and characteristics of Judaism, of political and religious conditions in the Græco-Roman world, and of the life, teachings, and work of the Founder of Christianity.
Lectures and assigned readings.
[Tuesday and Thursday, 9.30 A. M.]
- [39 *Hebrew Poetic Literature.* 2 hrs. 1st half-year.
Investigation (on the basis of the English translation) of the characteristics of Hebrew poetry, classification of the different types found in the Bible, comparison with other examples of Semitic poetry, and a careful study of the relation of literary form to interpretation. Special attention is given to the origin, structure and interpretation of the Psalter.
Omitted in 1905-1906.]
- 40 *Bible Seminary.* 2 hrs.
A course intended to train students for patient, accurate, and independent investigation of Biblical and cognate questions. It is open only to those who have a general acquaintance with the field of Biblical history and literature.
During 1905-1906 the origin, history, and significance of Israel's civil and religious laws and institutions will be critically studied. Especial attention is also given to their relation to later Judaism and Christianity.
[Wednesday, 2.00-4.00 P. M.]

Mr. CASE:—

- *41 *The Pauline Epistles.* 3 hrs. 1st term.
Grammatico-historical exegesis of Galatians with a comparison of the Pauline system.
[Tuesday, Thursday, and Saturday, 8.30 A. M.]
- *42 *The Synoptic Gospels.* 3 hrs. 2d term.
Historico-critical exegesis of the gospel of Mark with a comparison of the synoptic tradition. Critiques prepared by the class.
[Tuesday, Thursday, and Saturday, 8.30 A. M.]
- *43 *New Testament Greek.* 2 hrs.
Sight-reading. Attention is directed to the characteristics of New Testament syntax and diction. Two hours of recitation count as one hour of credit.
[Saturday, 9.30-11.30 A. M.]
- 44 *Patristic Greek.* 1 hr.
This course consists of rapid reading in the Apostolic Fathers with careful exegesis of the more important passages. Clement of Rome and portions of Hermas, Ignatius, Barnabas, and the *Didache* are read. A study is made of the genesis and development of Roman, Asiatic, and so-called Jewish-Christian types of doctrine.

III. MODERN LANGUAGES AND LITERATURES

THOMAS R. LOUNSBURY, L.H.D., LL.D.	HENRY A. BEERS, M.A.
ALBERT S. COOK, Ph.D., L.H.D.	HENRY R. LANG, Ph.D.
ARTHUR H. PALMER, M.A.	FRED'K M. WARREN, Ph.D.
GUSTAV GRUENER, Ph.D.	WILBUR L. CROSS, Ph.D.
CHARLTON M. LEWIS, Ph.D.	WILLIAM L. PHELPS, Ph.D.
ROBERT N. CORWIN, Ph.D.	ROBERT L. SANDERSON, M.A.
CHARLES S. BALDWIN, Ph.D.	CHARLES C. CLARKE, JR., B.A.
KENNETH MCKENZIE, Ph.D.	CLYDE C. GLASCOCK, Ph.D.
WILLIAM O. FARNSWORTH, M.A.	CHARLES G. OSGOOD, Ph.D.
JOHN C. ADAMS, Ph.D.	HOLLON A. FARR, Ph.D.
RUDOLPH SCHWILL, Ph.D.	ROBERT K. ROOT, Ph.D.
FREDERICK B. LUQUIENS, B.A.	ALBERT E. CURDY, Ph.D.
CHARLES U. CLARK, Ph.D.	

As auxiliary to the regular courses in modern languages and literatures, four clubs hold regular sessions throughout the year. These are The MODERN LANGUAGE CLUB, The ENGLISH CLUB, The GERMAN JOURNAL CLUB, and The ROMANCE JOURNAL CLUB. The first two in particular aim to deal with subjects not too technical in character, and thus to promote a sense of comity among all the workers in the same field.

The MODERN LANGUAGE CLUB, formed of instructors and students in the departments of English, Romance Languages, and German, holds its regular meetings on the second Saturday evening of each month for the reading and discussion of original papers, and for reports of progress in the field of these studies.

The ENGLISH CLUB, to which are invited all persons, whether members of the University or not, who are interested in the study or teaching of the English language or literature, meets on alternate Monday evenings to listen to the presentation of some topic, and engage in the informal discussion of it. The club never remains in session over an hour, and thus opportunity is afforded for keeping other engagements the same evening.

The GERMAN JOURNAL CLUB has for its object the presentation of reports on the most interesting periodicals published in German, and devoted to the science of Germanic philology.

The ROMANCE CLUB, consisting of the instructors and students in the departments of Romance Languages and Literatures, meets in 14 Lampson Hall, every other Saturday morning to report on, and discuss, the results of recent scientific research in this field of study.

The GERMAN SEMINARY ROOM in Lampson Hall, where the Journal Club meets, contains a working library for the use of advanced students in the Germanic languages. It also serves as a general study and working room for such students.

The ENGLISH SEMINARY ROOM, at 135 Elm st., which has lately been enlarged for the better accommodation of graduate students in English, contains the nucleus of a working library. This room is general headquarters for the graduate students in English, and serves for the meetings of the English Club, and for similar purposes.

ROMANCE LANGUAGES

Professor LANG :—

[1 *Low Latin.*

[See Classical Philology I, 49.]

Assistant Professor C. U. CLARK :—

2 *Palaeography.*

[See Classical Philology I, 34.]

3 *Latin Literature of the Early Middle Ages.* (First year's Course.)

[See Classical Philology I, 44.]

[Omitted in 1905-1906.]

4 *Latin Literature of the Late Middle Ages.* (Second year's Course.)

[See Classical Philology I, 45.]

FRENCH LINGUISTICS

Dr. BUFFUM :—

- 5 *French Phonology and Morphology.* 2 hrs.
Sixty lectures on the phonological and morphological development of the French language, with analysis of the forms of one of the earlier Old French texts.

Dr. CURDY :—

- 6 *Old French Readings.* 1 hr.
A two years' course in systematic reading of Old French texts, with literary study of the period. A knowledge of French historical grammar is requisite.

- 7 *French Dialects.* 1 hr.
The phonology and morphology of the dialects of northern France before the fifteenth century. A discussion of the various theories of the origin and spread of dialects, especially those of the Romance group, and a presentation of the geographical relations of the French dialects will introduce the course. A knowledge of French historical grammar is requisite.

- [8 *Old French Syntax.* 1 hr.
Lectures on the syntax of the Old French period with reference to the Latin and Modern French rules of syntax.
Omitted in 1905-1906.]

Mr. LUQUIENS :—

- 9 *Old French.* 2 hrs.
The French language and literature of the Middle Ages. The work will consist of careful study of Old French grammar, reading of representative texts, and lectures on the literary development of the period. Collateral reading and papers on assigned topics will be required.
Students will procure in advance Bonnard and Salmon's *Grammaire Sommaire de l'Ancien Français*, Paris, 1904.
This course is especially designed for students in the English Department.

FRENCH LITERATURE

Professor WARREN :—

- 10 *The Arthurian Epic.* 2 hrs.
Lectures on the medieval French poems which relate to Tristan, King Arthur and the Round Table, and the Holy Grail.

- 11 *Realists and Naturalists.* 1 hr.
Lectures on the modern Realistic School of France.

Assistant Professor C. C. CLARKE :—

- 12 *French Poetry of the Nineteenth Century.* 1 hr.
Lectures and readings intended to familiarize the student with the work of representative poets. The evolution of French poetry will be discussed and some exposition of the versification offered.
Course given in French.

Assistant Professor SANDERSON :—

- 13 *History of French Literature.* 2 hrs.
A study of French literature from the origins to 1870. Only works written in modern French will be read, the matter previous to the seventeenth century being treated in lectures. The course will be conducted in French.

[Wednesday and Friday, 10.30 A. M.]

- 14 *Molière.* 1 hr.
A linguistic and literary study of some of Molière's best plays. The course will be conducted in English.
[Monday, 10.30 A. M.]

- 15 *Practice in Writing and Speaking French.* 2 hrs.
This course will be conducted entirely in French. It is especially intended for graduates or undergraduates who read French with ease and understand it when they hear it spoken.
[Tuesday and Thursday, 11.30 A. M.]

Mr. FARNSWORTH :—

- 16 *Development of Literary Criticism in France.* 1 hr.
A survey of criticism from the Renaissance to the present time. Boileau, Voltaire, Mme. de Staël, Sainte-Beuve, Taine, and others are studied in their relation to groups. Collateral reading is required.

PHONETICS

Professor OERTEL :—

17 *Phonetics and Linguistics.*

[See Courses I, 67, 69.]

Assistant Professor C. C. CLARKE :—

18 *Phonetics of Modern French.*

1 hr.

Lectures and exercises on the phonetics of the cultivated Parisian speech. Attention is directed to the development of French pronunciation since the fifteenth century.

Students must have taken a course of general phonetics and must be able to read French readily.

PROVENÇAL

Professor LANG :—

19 *Provençal Language and Literature.*

2 hrs.

This course comprises a study of the historical grammar of medieval Provençal and of the poetry of the Troubadours. Appel's *Provenzalische Chrestomathie* (2d ed., Leipzig) will be used for the beginning.

20 *Seminary Course in Romance Languages and Literatures.*

1 hr.

This course is designed to give competent students guidance in original research.

During the coming year, the work in this course will center on the study of the origin and growth of medieval lyric poetry in Provence and France as well as in the other Romance Countries.

SPANISH

Professor LANG and Dr. SCHWILL :—

21 *Spanish (Elementary Course).*

3 hrs.

In this course, stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge, which is the leading aim of the instruction.

Professor LANG :—

- 22 *Spanish Prose of the Nineteenth Century.* 2 hrs.

The object of this course is to give the student fluency in reading Spanish. In addition to the reading done in the class-room, a number of texts will be assigned for outside study.

Dr. SCHWILL :—

- 23 *Reading and Composition in Spanish.* 2 hrs.

This course is designed for those who require the use of Spanish for commercial purposes. The writing of letters and the reading of commercial papers will be especially considered.

Professor LANG :—

- 24 *Spanish Prose of the Sixteenth and Seventeenth Centuries.* 2 hrs.

Lasarillo de Tormes, Cervantes' *Don Quijote*, etc., will be read in class, while additional work will be assigned for private study. The students' attention will be directed to the relation of Spanish literature in this period to other literatures.

Dr. SCHWILL :—

- 25 *The Spanish Drama of the Sixteenth and Seventeenth Centuries.* 2 hrs.

This course will consist of lectures in connection with the reading in class of selected plays by Lope de Vega, Tirso de Molina, Calderón, etc. Work will be assigned for reports to be made in class.

Professor LANG :—

- 26 *General View of Spanish Literature.* 1 hr.

The aim of this course is to give the student an outline of the development of Spanish literature. In addition to the work done in the class-room, outside reading will be required.

- 27 *Beginnings of Spanish Literature.* 1 hr.

This course comprises a study of Spanish literature previous to the fifteenth century, and of its relations with the literature of France.

ITALIAN

Assistant Professor MCKENZIE :—

- *28 *Italian (Elementary Course).* 3 hrs.

Stress will be laid on the acquisition of a good pronunciation, and on such a mastery of the grammar as shall lead to a ready and accurate reading knowledge.

Grandgent's *Italian Grammar* (revised edition, 1904); selections from modern authors.

[Tuesday, Thursday, and Saturday, 9.30 A. M.]

- 29 *Dante.* 2 hrs.

Thorough study of Dante's life and works, particularly his *Vita Nuova* (Casini's edition, Firenze, 1891) and *Divina Commedia*.

[Wednesday and Friday, 10.30 A. M.]

- [*30 *Italian Literature.* 2 hrs.

Lectures on Italian literature, with collateral reading.

Omitted in 1905-1906.]

- 31 *Petrarch and Boccaccio.* 2 hrs.

A study of the Italian writings of Petrarch and Boccaccio, and their influence on the humanistic movement. Rigutini's *Le Rime di Francesco Petrarca* (Milano, Hoepli, 1896); Fornaciari's *Novelle scelte di G. Boccaccio* (Firenze, Sansoni, 1900).

[Wednesday and Friday, 11.30 A. M.]

- 32 *Italian Literature of the Thirteenth Century.* 1 hr.

Reading of texts, with reference both to their literary qualities and to the history of the language. The text-book used will be Wiese's *Altitalienisches Elementarbuch* (Heidelberg, 1904).

- 33 *Fable-literature in the Middle Ages.* 1 hr.

The history of Æsopic fables; their relation to the bestiaries and the beast-epic. Conferences and reports.

GERMANIC LANGUAGES

GERMAN

Professor PALMER :—

The following courses, 34, 35, 36, and 47, will be given in 1905-1906, according to circumstances and the needs of the graduate students actually in attendance.

34 *Introduction to Germanic Philology.* 2 hrs.

A course introductory to the general study of Germanic philology, dealing with its history, methods, fields, and fundamental facts. The basis of the work is Paul's *Grundriss der Germanischen Philologie*, of which portions are read, discussed, and supplemented by informal lectures.

35 *Gothic.* 2 hrs.

An introductory course, especially for those who intend to study German or English historically, in the study of Gothic and its phonological relations to both earlier Indo-Germanic and later Germanic languages. Braune's *Gotische Grammatik* or Streitberg's *Gotisches Elementarbuch*, Heyne's *Ulfilas*, Streitberg's *Urgermanische Grammatik* or Dieter's *Altgermanische Dialekte*, and Henry's *Comparative Grammar of English and German*.

36 *Early Dramatic Literature of Germany.* 3 hrs.

Studies in the dramatic literature of the sixteenth and seventeenth centuries in Germany.

*37 *Goethe, Life, Shorter Poems and Faust.* 2 hrs.

Together with outline study of Goethe's life a large number of his shorter poems will be read in chronological order, and then particular attention given to the translation and interpretation of *Faust* (both parts).

[Monday and Friday, 9.30 A. M.]

*38 *Goethe, Prose Works.* 1 hr.

Reading and discussion of Goethe's more important prose works and utterances in letters, journals and conversations.

[Wednesday, 8.30 A. M.]

*39 *History of German Literature, 1624-1832.* 2 hrs.

The development of German literature will be studied from the time of Opitz to Goethe's death. The text-books will be: Kluge's *Geschichte der Deutschen National-Litteratur*, Scherer's *History of German Literature*, Max Müller's *German Classics*, and Hillebrand's *German Thought from the Seven Years' War to Goethe's Death*.

[Tuesday and Thursday, 8.30 A. M.]

Professor GRUENER :—

- [40 *Middle High German.* 3 hrs.

Hartmann: *Der Arme Heinrich* and *Iwein. Nibelungenlied*.
Selected poems of Walther von der Vogelweide. Selections
from Wolfram von Eschenbach's *Parzival*. Lectures and
papers.

Omitted in 1905-1906.]

- 41 *German Literature of the Reformation Period (1500-1624).* 3 hrs.

The development of German literature is studied from the
beginning of the Reformation to the time of Opitz. Characteristic
works of the important writers of the period are read,
chiefly for literary purposes, though also with reference to the
political, social, and religious conditions of the times.

- *42 *The Drama of Schiller and his Contemporaries.* 2 hrs.

Rapid reading and literary study of Lessing's *Nathan der
Weise*, Goethe's *Götz von Berlichingen* and *Iphigenie auf Tauris*,
and Schiller's *Wallensteins Tod*. Lectures on the literature of
the classical period with especial reference to the development
of the German drama.

[Wednesday and Friday, 10.30 A. M.]

Professor CORWIN :—

- 43 *Old High German.* 3 hrs.

A rather detailed course in the oldest High German dialects
and literature. Braune's *Althochdeutsche Grammatik* and *Althoch-
deutsches Leßbuch*, and the collateral literature for reference.

- [44 *History of New High German.* 2 hrs.

The earlier periods of the language will first be surveyed, for
the purpose of gaining a comprehensive idea of the chief lin-
guistic phenomena and their causes. Upon this basis a more
special study will be made of the origin and development of
New High German.

Omitted in 1905-1906.]

Dr. GLASCOCK :—

- 45 *Middle High German.* 1 hr.

A second year's course in Middle High German. Rapid read-
ing of selections from *Minnesangs Frühling*, *Gottfried's Tristan
und Isolde*, and Wolfram's *Parzival*. Lectures and papers.

Assistant Professor FARR :—

- *46 *German Literature of the Nineteenth Century.* 2 hrs.

This course is designed to give the student a survey of German literature after the death of Goethe. Representative works of the best known authors will be read in class, and occasional lectures will be given to show the development of German literature during the nineteenth century.

[Tuesday and Thursday, 11.30 A. M.]

SCANDINAVIAN

Professor PALMER :—

- 47 *Old Norse (Icelandic).* 3 hrs.

Grammar, and reading in the Sagas and the Elder Edda.

- [48 *Norwegian and Danish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

Omitted in 1905-1906.]

Dr. THORSTENBERG :—

- 49 *Swedish.* 2 hrs.

The object of this course is to lay the foundation for a reading and practical knowledge of the language. Together with the study of the grammar, selections from the writings of modern authors are read.

ENGLISH

Professor LOUNSBURY :—

- 50 *The Early Victorian Era ; Tennyson and his Contemporaries.* 2 hrs.

Professor BEERS :—

- *51 *Milton and his Contemporaries.* 2 hrs.

The *belles lettres* of the Puritan Revolution. All Milton's English, and some of his Latin poems, with his most important prose. The Church poets and Cavaliers, diaries, memoirs, etc.

[Monday and Friday, 5.00 P. M. ; second term, 3.00 P. M.]

- 52 *Medieval Allegory.* 2 hrs.
 The *Purgatory* of Dante, the *Romaunt of the Rose*, and a portion of *Piers Plowman* will be read in class, with other texts illustrative of the subject.
 [Monday and Wednesday, 11.30 A. M.]
- *53 *Aspects of the Drama.* 2 hrs.
 An examination of some twenty-five plays illustrating types and classes of English drama. Instruction half by lectures and half by recitations.
 [Tuesday and Thursday, 4.00 P. M. ; second term, 2.00 P. M.]
- *54 *The Romantic Movement in England.* 2 hrs.
 The history of the movement will be followed in text-books and in first-hand reading by the class.
 [Tuesday and Thursday, 5.00 P. M. ; second term, 3.00 P. M.]

Professor Cook :—

The strictly graduate courses offered below are given according to circumstances and the needs of the graduate students actually in attendance ; and special attention is given to the supervision of individual research in any part of the general field.

- 55 *Encyclopaedia and Methodology of English.* 2 hrs.
 This course is designed to acquaint the student with philological principles in general, with the more important branches of scholarship relative to the English language and literature, with a few of the representative books in each of these branches, and with the scope and method of research in this department. A knowledge of German is essential in this course.
 [Wednesday, 4.00 P. M., 135 Elm st.]
- 56^{*} *Theories of Poetry.* 2 hrs.
 A course in the theories of poetry in general, and in the principles of criticism applicable to its various departments, as the epic, dramatic, and lyric. Discussions and papers on the basis of standard works, such as Aristotle's *Poetics*, Sidney's *Defense of Poesy*, Woodbridge's *The Drama*, Longinus *On the Sublime*, Lessing's *Laokoon*, and others of similar character. Reading of masterpieces to illustrate and extend the principles derived from theoretic works.
 [Wednesday, 3.00 P. M., 135 Elm st.]

- [57 *Dante in English.* 2 hrs.

A course primarily in the *Divina Commedia* and the *Vita Nuova*, though selections from the other works are also read. Two or three of the best English translations are employed, together with such reference-books as may be necessary. Much attention is bestowed upon the historical and literary background of the poet and his works.

Omitted in 1905-1906.]

- 58 *Literary Types.* 2 hrs.

A survey of European literature, with reference to the characterization and illustration of the more important species. Candidates must satisfy the instructor with regard to their proficiency in French, German, and Latin.

[Tuesday, 4.00 P. M., 135 Elm st.]

- 59 *Advanced Old English.* 2 hrs.

Selected works read especially with reference to the acquisition of scholarly methods. The course this year begins with the study of Cook's edition of Cynewulf's *Christ*.

A knowledge of German is essential in this course.

[Thursday, 11.30 A. M., 135 Elm st.]

- 60 *Seminary in English Literature.* 3 hrs.

A critical study of some representative writer or department of literature. In 1894-95, Ben Jonson was selected; in 1895-96, Browning; in 1896-97, Chaucer; in 1897-98, the Jacobean Drama; in 1898-99, Spenser; from 1899 to 1905, Chaucer.

[Alternate Mondays, 7.00 P. M., 135 Elm st.]

- 61 *Historical English Prosody.* 2 hrs.

A brief consideration of metres in the related languages, followed by an outline of the subject traced from the Old English period to the present day.

[Tuesday, 11.30 A. M., 135 Elm st.]

- 62 *Old and Middle English.* 2 hrs.

An elementary course in the beginnings and earlier development of the English language and literature. Reading is begun at the earliest practicable moment, and the study is made as literary in character as is consistent with a thorough grounding in the rudiments of the language. This course, while it is indispensable to all graduate students and future teachers in English,

and will also be of service to students of English history and of the English Bible, is designed as well for those who, in the pursuit of general culture, are unwilling to remain ignorant of the foundations of the English language and literature.

[Tuesday and Thursday, 10.30 A. M., C. I. O.]

Professor CROSS :—

63 *English Prose Fiction in the Nineteenth Century.* 1 hr.

Instruction in this course is mainly by lecture. Each student is required to read and report on a list of books, and to prepare in the spring term a paper on an assigned topic.

[Tuesday, 2.00 P. M., 20 Sheffield Hall.]

[64 *Romantic Verse since 1850.* 1 hr.

This course deals mainly with the so-called Pre-Raphaelites, as Dante Gabriel Rossetti and William Morris. These and other poets are studied in connection with the medieval romances from which they drew. The work thus includes literary history and a study of sources.

Omitted in 1905-1906.]

Professor LEWIS :—

65 *Verse Composition.* 1 hr.

Fortnightly practice in composition, with regular appointments for consultation and criticism. A study of the chief varieties of English verse and stanza (such as blank verse, heroic verse, the sonnet, etc.).

66 *Shakespeare.* 1 hr.

A minute study of *Macbeth* and *Hamlet*. Critical examination of the text, and of the work of the leading commentators, and investigation of sources.

[Saturday, 9.30 A. M.]

67 *Nineteenth Century Poets.* 1 hr.

Lectures on Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Browning, Rossetti, Clough, Arnold, Morris, Swinburne, and others if time permits. A large amount of reading will be required.

[Monday, 12.30 P. M.]

Professor PHELPS :—

68 *English Literature of the Seventeenth Century.* 2 hrs.

A study of English poetry and prose from Donne to Dryden, exclusive of the drama. The poetry of Donne, Drummond, Herbert, Crashaw, Vaughan, Quarles, Carew, Suckling, Herrick, Cowley, Waller, Marvell, Butler, and Dryden will be read; also the prose of Burton, Browne, Taylor, Pepys, Fuller, Walton, Clarendon, Bunyan, and Dryden. The social life of the times is discussed in connection with some of the authors mentioned above. Milton is not included in this course.

[Monday, 12.30 P. M.]

[69 *Elizabethan Literature.* 2 hrs.

Studies in the poetry and prose of the Elizabethan period, exclusive of the drama. Wyatt, Surrey, Ascham, Foxe, Painter, Lyly, Raleigh, Greene, Nash, Lodge, Marlowe, Hooker, Sidney, Spenser, Shakespeare, Davies, Drayton, Chapman, and others, will constitute the required reading. Lectures, discussions, and preparation of special papers by members of the class.

Omitted in 1905-1906.]

*70 *Tennyson and Browning.* 2 hrs.

The autumn term will be occupied with the study of Tennyson. Practically all of his poetry will be read. His theory of the poet's art, his skill in technique, his artistic expression, and his representation of nineteenth century ideas will be studied in detail.

After Christmas, the complete works of Browning will be taken up, only those being omitted which are unnecessary in forming a general estimate of his work as a poet. His personal force, his growth, his attitude toward his art, and his place in nineteenth century poetry will be considered; but the chief attention will be paid to his analysis of human life and character.

The instruction in this course will be by means of recitations, discussions, and the preparation of short special papers by the students.

[I, Tuesday and Thursday, 8.30 A. M. ; II, Tuesday and Thursday, 11.30 A. M. ; III, Tuesday and Thursday, 12.30 P. M. ; IV, Monday and Wednesday, 8.30 A. M.]

[71] *Elizabethan Drama.*

2 hrs.

The English drama, from the mystery plays to the closing of the theatres in 1642, studied from both the literary and the dramatic point of view. Plays of the pre-Elizabethan period are read and briefly discussed, with the object of getting a historical background. Some plays of all the principal dramatists from 1580 to 1640, except Shakespeare, will be read: Marlowe, Ben Jonson, Dekker, Heywood, Chapman, Middleton, Beaumont and Fletcher, Webster, Ford, Massinger, Shirley. As a rule, one play will be read for each lesson.

The method of instruction in this course will be by lectures. A weekly one-page critical theme will be required of each student in the class.

Omitted in 1905-1906.]

72 *The Contemporary Drama.*

1 hr.

A study of contemporary stage-plays in Europe and in America from the literary, social, and dramatic point of view. Some of the authors to whom particular attention will be paid are Ibsen, Sudermann, Hauptmann, Maeterlinck, Rostand, Mirbeau, Pinero, and Jones.

A good reading knowledge of both French and German is a necessary prerequisite to this course.

[Monday, 10.30 A. M.]

Assistant Professor BALDWIN :—

*73 *The Teaching of Rhetoric.*

1 hr.

Theoretical and practical study of principles and methods in the teaching of composition, discussion of topics assigned for report, theme-reading.

Dr. OSGOOD :—

74 *Middle English.*

1 hr.

A course in some of the more important phenomena and problems of the English literature and language between 1200 and 1400, not including Chaucer. Bøddeker's *Altenglische Dichtungen*, *The Owl and the Nightingale*, *King Horn*, *Havelok*, *Floris and Blanchefleur*, the Gawain poet, and Langland, are names and titles indicating the texts to be considered.

[Monday, 9.30 A. M.]

[75 *Middle English Romances.*

1 hr.

A study of the various groups of romances upon the basis of Billings' *Guide to Middle English Metrical Romances*, supplemented in some cases by other outlines. The work will consist in part of the detailed study of two or three texts in the best editions, such as Hall's *King Horn*, Hausknecht's *Floris and Blanchefleur*, and Kölbing's *Amis and Amiloun* and *Sir Tristram*. This will be supplemented by more extended reading in the romances and elsewhere, for the purpose of obtaining a general survey of the subject.

Omitted in 1905-1906.]

THE USE OF THE LIBRARY

MR. KEOGH :—

76 *Bibliography.*

Ten lectures on certain practical aspects of bibliography. Discussion of general reference books ; the means of finding what has been published on a subject ; the reviewing of books ; the classification and cataloguing of libraries ; the taking and filing of notes and references ; the compilation of bibliographies ; the printing of theses.

IV. THE FINE ARTS

JOHN F. WEIR, N.A., M.A. JOHN H. NIEMEYER, M.A., S.A.A.
GEORGE H. LANGZETTEL, B.F.A. G. ALBERT THOMPSON, B.F.A.
JOLINE B. SMITH, B.F.A.

Professor WEIR :—

1 *Painting.*

Technical course in painting from the living model ; composition ; lectures on the grammar of art.

2 *Modeling.*

Studies from casts and the living model, with lectures on the grammar of art.

Professor NIEMEYER :—

3 *Drawing.*

Technical course in drawing from the antique and the living model ; from the portrait and nude model ; lectures in perspective and composition.

Dr. JOHN P. C. FOSTER :—

4 *Anatomy.*

Lectures in artistic anatomy.

Mr. GEORGE H. LANGZETTEL :—

5 *Drawing.*

Drawing from casts.

Mr. G. ALBERT THOMPSON :—

6 *Painting.*

Painting from still-life.

Messrs. THOMPSON, SMITH, and LANGZETTEL :—

7 *Evening Class in Illustrative and Decorative Design.*

Only those students who have been qualified by a course in drawing can enter the course in painting. The hours for students of the Graduate School must be determined individually.

Students in the Graduate School may pursue the course in drawing in the Art School without restriction as to time.

The charges for instruction in the Art Course is \$25 for the college year, entitling the students to all the privileges of the School as arranged for students from other departments of the University.

V. MUSIC

HORATIO W. PARKER, Mus.D. SAMUEL S. SANFORD, M.A.
HARRY B. JEPSON, B.A., Mus.B. ISIDOR TROOSTWYK,
H. STANLEY KNIGHT, DAVID STANLEY SMITH, B.A., Mus.B.
WILLIAM EDWIN HAESCHE, Mus.B. LEO SCHULTZ.
CHARLES RABOLD

Mr. D. S. SMITH :—

1 *Harmony.* 2 hrs.

The study of chords, progressions, modulation and non-harmonic notes. The work consists of exercises in figured-bass, the harmonization of melodies, and harmonic analysis.

Text-book : Chadwick's *Harmony*.

[I, Tuesday and Thursday, 4.00 P. M.]

[II, Tuesday and Thursday, 5.00 P. M.]

2 *Counterpoint.* 2 hrs.

Practice in strict Counterpoint, both simple and double, harmonization of chorales, composition of short pieces in a freer style, and analysis of simple polyphonic forms.

Text-book : Spalding's *Tonal Counterpoint*.

[I, Monday and Wednesday, 4.00 P. M.]

[II, Tuesday and Thursday, 3.00 P. M.]

Professor PARKER :—

3 *Strict Composition.* 2 hrs.

The writing of canons, fugues, and polyphonic choral movements. Each student is required to submit at the close of the year a complete four-voiced fugue.

[Tuesday and Thursday, 2.00 P. M.]

4 *History of Music.* 1 hr.

Lectures on the development of music from its earliest stages, with biographical sketches of composers and practical illustrations at the piano.

Text-book : Parry's *Evolution of the Art of Music*.

[Wednesday, 5.00 P. M.]

Mr. HAESCHE :—

5 *Instrumentation.* 2 hrs.

Lectures on the characteristics of all the instruments of the modern orchestra, with illustrations of their use by great composers. Exercises in practical orchestration, and playing from orchestral scores.

[Wednesday and Friday, 3.00 P. M.]

Professor PARKER :—

6 *Free Composition.* 2 hrs.

The writing of free vocal and instrumental pieces in the smaller forms, and later in the sonata form, either for single instruments or a combination of instruments.

No text-book is used.

[Wednesday and Friday, 2.00 P. M.]

7 *Advanced Orchestration and Conducting.* 1 hr.

The study of old and new orchestral scores; practical instruction in conducting; orchestration of original or other compositions.

No text-book is used, but students are required to buy a number of orchestral scores.

[Thursday, 11.30 A. M.]

Professor SANFORD, Assistant Professor JEPSON, Assistant Professor TROOSTWYK, Assistant Professor KNIGHT, Mr. RABOLD and Mr. SCHULTZ :—

8 *Practical Music.* 1 hr.

Instruction is given in piano-, organ-, violin-, and violoncello-playing and in singing. Fees range from \$50.00 to \$100.00 for the college year. No student is admitted to this course who has not been admitted to one of the theoretical courses. Private piano or organ practice may be obtained for a small fee.

B. THE PHYSICAL AND NATURAL SCIENCES AND MATHEMATICS

VI. PHYSICAL AND NATURAL SCIENCE

WILLIAM H. BREWER, Ph.D., LL.D.	SIDNEY I. SMITH, M.A.
ARTHUR W. WRIGHT, Ph.D.	CHARLES S. HASTINGS, Ph.D.
ADDISON E. VERRILL, M.A.	RUSSELL H. CHITTENDEN, LL.D., D.Sc.
WILLIAM G. MIXTER, M.A.	HORACE L. WELLS, M.A.
EDWARD S. DANA, Ph.D.	LOUIS V. PIRSSON, M.A.
FRANK A. GOOCH, Ph.D.	HENRY S. GRAVES, M.A.
SAMUEL L. PENFIELD, M.A., LL.D.	CHARLES SCHUCHERT, M.A.
HARRY B. FERRIS, M.D.	JAMES W. TOUMEY, M.S.
HERBERT E. GREGORY, Ph.D.	C. WILLARD HAYES, Ph.D.
ALBERT G. KELLER, Ph.D.	ALEXANDER W. EVANS, M.D., Ph.D.
PHILIP E. BROWNING, Ph.D.	LAFAYETTE B. MENDEL, Ph.D.
ANGELO HEILPRIN	YANDELL HENDERSON, Ph.D.
HENRY L. WHEELER, Ph.D.	JOSEPH BARRELL, Ph.D.
WESLEY R. COE, Ph.D.	LOUIS D. HUNTOON, M.E.
WILLIAM J. COMSTOCK, Ph.B.	EDWARD A. BOWERS, B.A., LL.B.
ISAAC K. PHELPS, Ph.D.	LEONARD M. TARR, M.A.
HARRY W. FOOTE, Ph.D.	GEORGE F. EATON, Ph.D.
LEO F. RETTGER, Ph.D.	HENRY H. ROBINSON, Ph.D.
ARTHUR L. DEAN, Ph.D.	ANDREW L. WINTON, Ph.D.
TREAT B. JOHNSON, Ph.D.	WILLIAM E. FORD, JR., Ph.D.
RALPH G. VAN NAME, Ph.D.	GEORGE S. JAMIESON, Ph.D.
ARTHUR H. GRAVES, B.A.	AVARD L. BISHOP, M.A.

The work in PHYSICS is carried on in the Sloane Physical Laboratory, and the Physical Laboratory of the Sheffield Scientific School in Winchester Hall :

The work in CHEMISTRY in the Sheffield Chemical Laboratory, and in the Kent Chemical Laboratory :

The work in MINERALOGY, PETROLOGY, GEOLOGY, PALEONTOLOGY, and ZOOLOGY in the Peabody Museum of Natural History and in the Kirtland Hall of the Sheffield Scientific School :

The work in PHYSIOLOGY and PHYSIOLOGICAL CHEMISTRY in the Sheffield Biological Laboratory :

The work in COMPARATIVE ANATOMY and GENERAL BIOLOGY in the Sheffield Biological Laboratory :

The work in BOTANY in the Eaton Herbarium, Sheffield Hall :

The work in FORESTRY in the Forest School.

The GEOLOGICAL CLUB is an association of the instructors and graduate students, for the purpose of encouraging the students to prepare papers, and aid in the discussion of current topics of interest in geological subjects.

The PHYSICS JOURNAL CLUB, open to graduate students in Physics, meets weekly for the review and discussion of the current literature in this department of study.

The PHYSICAL CLUB, organized for study, criticism and discussion, holds fortnightly meetings. Open to graduate and advanced students in Physics.

The KENT LABORATORY JOURNAL CLUB meets fortnightly for the review and discussion of current chemical literature.

The CHEMICAL CLUB, composed of instructors, graduate students, and others interested in Chemistry, holds fortnightly meetings for the presentation and discussion of papers and reviews of recent work.

The BIOLOGICAL CLUB, composed of instructors, graduate students, and others interested in Biology, meets fortnightly for the presentation and discussion of papers and reviews of recent work.

PHYSICS

Professor A. W. WRIGHT :—

1 *Physics.*

4 hrs., to count as 2 hrs.

Chiefly practical work in the Sloane Physical Laboratory, with measurements, especially in heat, light, electricity, and magnetism, each exercise occupying two hours. As introductory to the laboratory practice, the exercises during a portion of the first term consist of recitations or discussions upon the theory and methods of physical measurements, the use of instruments, and other special topics. Laboratory facilities are also freely accorded to students of the course at other times than those of the stated exercises.

[Monday and Friday, or Tuesday and Thursday, 9.30–11.20 A. M., Sloane Laboratory.]

- 2 *Physics (Advanced Course).* 4 hrs., to count as 2 hrs.

Practical work in the Sloane Physical Laboratory, with instruction in the principles and methods of physical investigation, the processes and instruments of measurement, and the methods of computing and reducing results of observations. Special attention is paid to practical measurements in optics, electricity, and magnetism. The student is expected to make original investigations an important part of his work, and has the free use of the laboratory facilities for carrying them on.

For those who have already pursued course 1 or its equivalent.

[Wednesday, 10.30 A. M.—12.30 P. M., and Thursday, 11.30 A. M., Sloane Laboratory.]

- 3 *Study of special problems in Physics and direction of research work in the Sloane Laboratory.*

Professor HASTINGS :—

- 4 *Physics.* 3 hrs. lectures, 6 hrs. laboratory work.

Laboratory work in the Sheffield Physical Laboratory, supplemented by lectures on the theory of observation with the method of least squares, and on the theory of electricity and electrical instruments. The use of the laboratory is at the command of the student at all times.

[Lectures on Monday, Wednesday, and Friday, 12.00 M.]

Dr. L. P. WHEELER :—

- 5 *Theory of Electrons.* 1 hr.

The lectures will treat (1) of the origin of the idea of the electron and the evidence for its existence; (2) of the question of its material or electrical nature; and (3) of that explanation of certain of the properties of matter and of the phenomena of electro-magnetism which is based on the hypothesis of a molecular structure of electricity.

For courses in Mathematical Physics, see VII.

CHEMISTRY

(COURSES IN THE SHEFFIELD CHEMICAL LABORATORY)

The analytical laboratories of the Sheffield Scientific School are open to students in term time from 9 to 1 and from 2 to 5

o'clock, every week-day except Saturday. The greater part of the instruction is given in the laboratory to each student separately, but the various classes have, in addition, two or more lectures or recitations a week, in connection with the studies pursued in the laboratory.

Professors MIXTER and WELLS, Assistant Professors H. L. WHEELER, WALDEN, and Mr. COMSTOCK, Doctors FOOTE, WINTON, JOHNSON, and JAMIESON.

Professor MIXTER :—

6 *Chemical Physics.*

Especially the methods employed in calorimetry and in the determination of specific heat.

Professor WELLS :—

7 *Qualitative Analysis.* 1st term.

Embraces a study of the commonly occurring elements in their qualitative relations, and includes a systematic course of analysis for the same. A good knowledge of elementary chemistry is a necessary preparation for this. If desired the course is extended to include a study of many of the rare elements.

[Laboratory hours: Monday to Friday, 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M. Lectures and recitations: Monday and Tuesday, 3.00 P. M.,—occasionally at 12.00 M.]

8 *Quantitative Analysis.*

This is open only to those who have taken course 7 or its equivalent.

(a) *Gravimetric Analysis.* Second term. Embraces a series of exercises involving a considerable number of important methods.

(b) *Volumetric Analysis.* First term. This follows the gravimetric analysis. It includes the most important and typical methods.

(c) *Ultimate Organic Analysis.* First term.

9 *Inorganic Preparations.* 1st half of 2d term.

A course of laboratory work, with lectures and recitations. About thirty or forty compounds are prepared, which give a variety of important and instructive processes.

10 *Advanced Quantitative Analysis.*

(a) *Metallurgical Chemistry.* The analysis of ores, fuels, fluxes, alloys, metals, and other furnace products.

(b) *Mineralogical Chemistry.* The analysis of minerals for scientific purposes.

[Laboratory hours, every week-day (except Saturday). 9.00 A. M.—1.00 P. M., and 2.00—5.00 P. M.]

11 *Metallurgy and Assaying.* 2d half of 2d term.

A course of recitations and lectures on elementary metallurgy, followed by a short course of demonstrative lectures on gold and silver assaying, with the practical application of assaying to a few typical ores.

12 *Technical Gas-Analysis.* 2d half of 2d term.

A short practical course, including the principal methods.

13 *Investigations in Inorganic Chemistry.*

Opportunities are offered, to those who have had sufficient preparation, to make researches upon analytical methods, the preparation of chemical compounds, and other scientific problems.

Mr. COMSTOCK :—

14 *Elementary Organic Chemistry.* Both terms.

During the first four weeks of the second term the afternoon exercises are omitted and daily laboratory work substituted, 9.00 A. M. to 1.00 P. M., with occasional lectures at 12.00 M.

[Recitations supplemented by lectures, Thursday and Friday, 5.00 P. M.]

15 *Organic Chemistry.* 2 hrs. 1st term.

A continuation of the above course. Recitations and lectures. [Monday and Tuesday, 5.00 P. M.]

Assistant Professor H. L. WHEELER and Dr. JOHNSON :—

16 *Advanced Organic Chemistry.*

This offers an opportunity for more extended study and original investigation to those who have proper preparation.

17 *Organic Preparations.* 2d half of 2d term.

Laboratory work, consisting of five exercises per week of about three hours each, in the preparation of such compounds as will give familiarity with the most important synthetical methods.

Dr. WINTON :—

18 *Proximate Organic Analysis.* 1st half of 2d term.

Lectures on the chemical composition of vegetable and animal substances (including foods) and laboratory practice in the detection and quantitative determination of the various constituents. The materials studied include cereal products, oil seeds, milk and its products, fats and oils, alcoholic liquors, tea, coffee, spices, tannin products, etc. A special feature is the identification of vegetable materials by microscopical examination. This course is open only to those who have previously taken courses in qualitative and quantitative analysis. Some knowledge of botany and vegetable histology is also highly desirable.

19 *Advanced Proximate Organic Analysis.* 2d half of 2d term.

A continuation of the preceding course. Among the materials which may be studied are foods, wood products, textile fibers, dye stuffs, etc. Special attention is given to the detection of adulteration. The microscopical work includes a systematic study of various economic seeds, roots, leaves, barks, woods, etc., with special reference to their identification in powder form.

20 *Agricultural Chemical Analysis.*

Laboratory practice in the analysis of fertilizers, cattle foods, dairy products, insecticides, fungicides, and various other agricultural materials. Special attention will be given to the microscopical examination of cattle foods.

Assistant Professor FOOTE :—

21 *Physical Chemistry.* 2d half of 2d term.

A course of lectures on the theory of Physical Chemistry with special application to biology, one hour weekly.

[Monday, 5.00 P. M.]

22 *Physico-Chemical Measurements.* 2d term.

Laboratory practice in the more important methods of Physico-Chemistry.

[Monday to Friday, inclusive, 9.30 A. M.—1.00 P. M.]

23 *Electro-Chemistry.* 2d term.

Experimental work in Electro-Chemistry, including the usual measurements, quantitative electro-analysis, and the synthesis of organic and inorganic compounds.

[Monday to Friday, inclusive, 9.30 A. M.—1.00 P. M.]

Dr. JAMIESON :—

24 *Sanitary Water-Analysis.* 1st half of 2d term.

A practical course in the chemical examination of drinking-waters. Two exercises of three hours each per week.

(COURSES IN THE KENT LABORATORY)

The Kent Laboratory is open from 9.00 A. M. to 1.00 P. M., and from 2.00 to 5.00 P. M. excepting Saturdays, to students who take strictly graduate courses.

Professor GOOCH, Assistant Professor BROWNING, Dr. PHELPS and Dr. VAN NAME :—

*25 *Inorganic Chemistry—Inductive and Descriptive.*

3 exercises—6 hrs.

Lectures, laboratory work, and class-room exercises. An introduction to elementary chemical theory, the use of symbols and equations, and the study of the elements and their compounds.

[Monday, Wednesday and Friday, 11.30 A. M.—1.20 P. M. ;
Tuesday, Thursday and Saturday, 11.30 A. M.—1.20 P. M.]

Assistant Professor BROWNING :—

*26 *Qualitative Analysis.* 3 exercises—5 hrs.

Laboratory practice in the ordinary processes of qualitative analysis, with lectures.

[Monday, 9.30–10.20 A. M. ; Wednesday and Friday, 8.30–10.20 A. M.]

Professor GOOCH and Dr. PHELPS :—

*27 *Organic Chemistry.* 3 exercises—5 hrs.

An introduction to the study of the compounds of carbon.
Lectures, written exercises and laboratory work.

[Monday and Wednesday, 10.30–11.20 A. M. ; Friday,
10.30 A. M. – 1.20 P. M.]

Professor GOOCH :—

*28 *Quantitative Analysis.* 2 exercises—6 hrs.

Lectures and laboratory practice in the use of the simpler
methods of gravimetric and volumetric quantitative analysis.

[Tuesday and Thursday, 2.00–4.50 P. M.]

29 *Quantitative Analysis (second course).*

Practice in the more complex processes of gravimetric, volumetric, and electrolytic analysis.

[Hours for consultation fixed by appointment.]

30 *Chemical Theory.* 1 hr.

This course is devoted to the historical development of the
general principles and modern theories of chemistry.

[Tuesday, 11.30 A. M. – 12.20 P. M.]

31 *Research in Inorganic Chemistry.*

The critical examination of reactions.

[Hours for consultation fixed by appointment.]

32 *Research in Analytical Chemistry.*

Problems of *analysis*—either experimental criticism of known
processes or constructive work looking towards the development of new methods.

[Hours for consultation fixed by appointment.]

Assistant Professor BROWNING :—

33 *Inorganic Preparations.* 3 hrs.

A short course, mainly laboratory work, covering typical
methods for the preparation of inorganic salts.

[Tuesday, 4–5.50 P. M. ; Thursday, 5–5.50 P. M.]

34 *The Rare Elements.* 3 hrs.

Lectures with laboratory work covering the principal reactions of the elements not included in the general course.

[Tuesday, 3.00-4.50 P. M. ; Thursday, 3-3.50 P. M.]

35 *Analytical Chemistry of the Rare Elements.*

Special problems involving separation of the rare earths and metals.

Dr. PHELPS :—

36 *The Carbon Compounds—Descriptive and Theoretical.*

3 hrs.

A course of lectures treating systematically the more important compounds of carbon and the theories concerning them. An elementary knowledge of organic chemistry is desirable as a preparation.

[Tuesday, Thursday and Saturday, 8.30-9.20 P. M.]

37 *Organic Synthesis.*

Laboratory practice in synthetical processes too long or too complicated to be included in the experimental work of course 27.

[Hours for consultation fixed by appointment.]

Dr. VAN NAME :—

38 *Physical Chemistry.*

1 hr.

An elementary course of lectures covering the more important theories of physical chemistry, including electro-chemistry.

[Saturday, 9.30-10.20 A. M.]

39 *Physico-Chemical Methods.*

4 hrs.

A laboratory course affording practice in a number of the typical processes and measurements of physical chemistry, including electro-chemistry.

[Monday and Friday, 2.00-3.50 A. M.]

BIOLOGY

Professor VERRILL :—

40 *Zoology.*

Laboratory practice, recitations, readings, and lectures. The laboratory work is varied according to circumstances, in order

to accommodate, as far as possible, those students who wish to pursue special branches. Most of the time is devoted to comparative anatomy, morphology, histology, and systematic zoology. Ample collections in the Peabody Museum, representing all classes of animals, are available for instruction, while the proximity to the sea makes it easy to provide fresh or living examples of most classes of marine animals for study and dissection.

Excursions may be arranged, when desirable, for the study of marine animals in their natural surroundings, on the adjacent sea coasts, and for making collections. Occasionally parties of advanced students have been taken to the coal-reefs of the Bermuda islands for these purposes. Extensive collections of insects are available for the study of Economic Entomology.

Professor S. I. SMITH and Assistant Professor COE :—

41 *General Biology.* 3 hrs.

42 *Comparative Anatomy and General Biology.* 6 hrs. 2d term.

43 *Comparative Anatomy and General Biology.*

Graduate students who have had sufficient elementary training are received in the Sheffield Biological Laboratory, and are provided with special advanced courses of instruction adapted as far as possible to the particular wants of the individual student. Such courses may cover either or both terms, and require at least three hours of laboratory work per day for two or more days each week. To such students the laboratory is open five days a week.

44 *Morphology and Embryology of Vertebrates.* 1st term.

A course of about twenty exercises of two hours each, consisting of lectures and demonstrations with laboratory work. The classification of vertebrate animals, and the comparative morphology of the different sets of organs in the various groups, is first discussed with special reference to human morphology. Then the development, fertilization and cleavage of the egg, and the formation of the germ layers, tissues, and organs of the vertebrate body are taken up in order. The course may be supplemented, if desired, by more extended practical work in the laboratory.

Assistant Professor COE :—

45 *Biology of the Cell.*

A general course in Cytology, consisting of laboratory work supplemented by informal lectures, on the structure and manifestations of the animal cell, with special attention to maturation, fertilization, and cleavage of the ovum. The subject is treated with reference to its bearing on the problems connected with the phenomena of growth, heredity, and evolution. The course will include the practical study of protoplasmic structure and movement, various types of cells with resting nuclei, cell-division, conjugation in unicellular animals, structure of sperm-ary and development of spermatozoa, ovary and development of the ovum, fertilization, parthenogenesis, types of cleavage, and formation of primary layers of the embryo. Considerable attention is given to the technique of the subject and to experimental embryology.

46 *General Embryology.*

Laboratory work and informal lectures on the development of certain types of invertebrates, followed by a similar study of the elementary principles of vertebrate embryology.

In addition to the above, special courses may be arranged for either term to meet the requirements of individual students, and such courses may include a study of the later stages of the development of the embryo, with special reference to the vertebrates, and a practical study of the development of the chick.

Professor FERRIS :—

47 *Comparative Morphology of the Vertebrate Brain.* 1 hr.

A course extending through the entire year, consisting principally of dissections with demonstrations and lectures, on the embryology and general morphology of the brain, with special reference to the human brain.

Professors CHITTENDEN and MENDEL :—

48 *Physiological Chemistry.*

Graduate students who have sufficient knowledge of analytical and organic chemistry and elementary physiology or general

biology are received in the Sheffield Biological Laboratory at the beginning of the academic year, where they can pursue a course in physiological chemistry extending throughout the entire year. The course necessitates, on an average, four hours of laboratory work each day, and attendance at lectures and recitations three or four times each week.

Students who are desirous of studying any special subject in physiological chemistry and have but a limited amount of time are received also, provided they are qualified by previous work to pursue the study advantageously.

[Monday and Friday, inclusive, 9.00 A. M.—1.00 P. M.]

49 *Research Work in Physiological Chemistry.*

It is desired to make the laboratory useful to advanced students and other persons who have shown the necessary qualifications to undertake original investigations independently or under guidance. To those suitably trained opportunity for undertaking research work will be given; and the facilities which the laboratory affords will be placed freely at their disposal. Investigations will be planned with reference to the needs and attainments of the individual.

50 *Experimental Physiology.* 3 hrs.

Essentially a laboratory course intended to afford experimental acquaintance with certain departments of physiology, and giving particular attention to general physiological methods. Opportunity is also afforded for more advanced work in certain lines of experimental physiology.

[Saturday, 9.00 A. M.—1.00 P. M.]

51 *Physiological Seminary.* 2 hrs. both terms.

A study of the recent advances in physiology and physiological chemistry is undertaken. The investigations which have led to the establishment of important facts are presented; and informal discussions are held on the bearing which recent discoveries in physiology have on existing views. The participants are required to prepare reports and reviews of papers appearing in the current German, French, and English physiological literature. For this work the library facilities of the University are satisfactory.

[Wednesday, 4.00—6.00 P. M.]

Professor CHITTENDEN :—

52 *Experimental Toxicology.* 2d half 2d term.

A course of about twenty lectures, with demonstrations on the physiological action of the more important mineral and alkaloidal poisons. This course can be supplemented, if desired, by laboratory work on the chemical reactions of poisons, with a study of the methods of detecting and separating poisons.

[Tuesday, Thursday, and Saturday, 8.15 A. M.]

*53 *Physiology.* 1 hr.

A lecture course illustrated with demonstrations, etc., Huxley's *Lessons in Elementary Physiology* being used as a basis.

[Wednesday, 2.00 P. M.]

*54 *Physiological Chemistry.* (Shorter course.) 2½ hrs.

Two exercises a week, of a minimum of two and a half hours each, in the laboratory of physiological chemistry. The time is devoted mainly to a study of the chemistry of the connective, contractile, and nervous tissues, of the chemical processes of salivary, gastric, and pancreatic digestions, and so far as the time allows, of other subjects connected with the physiology of nutrition and the chemistry of the excretions.

A laboratory fee is charged for this course.

55 *Physiology of Nutrition.* 3 hrs. 1st half 2d term.

Assistant Professor HENDERSON :—

56 *Haemodynamics.* 3 hrs.

Primarily a laboratory course—with research work—in the study of the circulation. Open only to those who have already had thorough training in the general principles of physiology.

Dr. RETTGER :—

57 *Bacteriology and Hygiene.* 4 hrs.

A general course in bacteriology and hygiene adapted to those who have had sufficient training in elementary chemistry and general biology. Essentially a laboratory course supplemented by lectures and recitations.—Practical instruction is given in the methods of preparing culture media and in the isolation and

identification of the different species of bacteria coming under observation. Considerable time is devoted to the study of pathogenic organisms in their relation to disease. The bactericidal action of various antiseptics and disinfectants on a number of pathogenic organisms, is given as much attention as time permits. Opportunities are offered for the study of problems in bacteriology and hygiene which are of special interest to the student of biology. Such problems may be taken up as subjects for a thesis or in connection with work carried on in other departments of the university.

Assistant Professor EVANS:—

*58 *Elementary Botany.* 4 hrs.

An elementary course in the botany of flowering plants. Laboratory work and informal lectures. The plant and its various organs are studied with respect to their form, structure, and functions, and special emphasis is laid on the relationships of a plant to its environment.

[Monday and Wednesday, 9.30–11.20 A. M.]

59 *Morphology of Plants.* 4 hrs.

Laboratory work and informal lectures. Beginning with the simplest forms, the various groups of plants are taken up in suitable types, and their structure, development, and mode of life are studied and compared. The course is limited to those who show a satisfactory knowledge of the botany of flowering plants.

[Wednesday and Friday, 3.00 P. M.]

60 *Advanced Morphology and Taxonomy of Plants.*

The botanical laboratory is open throughout the year to graduate students, properly qualified, who may wish to pursue advanced studies along some special line in morphological or taxonomic botany. The instruction will be adapted as far as possible to the needs of the individual student.

Dr. DEAN:—

61 *Plant Physiology.*

Opportunity for study in plant physiology is offered to graduate students who have a knowledge of plant morphology and

histology. Familiarity with the elements of physics and chemistry is presupposed. Attention is especially directed to the chemical features of vegetable physiology, including the study of the composition of the plant body, plant nutrition, the synthesis of proteids and carbohydrates, the distribution, action, and significance of enzymes, and other features of plant metabolism.

The laboratory will be open for work from 9 A. M. to 1 P. M.

Professor TOUMEY and Mr. A. H. GRAVES:—

62 *Forest Botany.*

- (a) *Dendrology.* 1 hr. throughout the year, and $\frac{1}{2}$ day field work, fall and spring terms.

During the fall term biologic and taxonomic studies are made upon the species of woody plants indigenous about New Haven. Special attention is given to the identification of trees in their winter condition. During the winter and spring terms, by means of lectures, laboratory work, field work and herbaria, a general taxonomic study is made of the economic tree flora of the United States. Special attention is given to the characteristics of the various species by means of which they are most readily recognized in the field.

- (b) *External and Internal Morphology, with special reference to woody plants.* 6 hrs. in two laboratory periods, winter term.

Special attention is given to the external morphology of the vegetative organs of woody plants. Internal morphology deals particularly with the origin and development of the tissues of woody plants and the arrangement and functions of the tissues. Emphasis is placed upon the structure and development of wood.

- (c) *Forest Geography and Ecology.* 2 hrs. and $\frac{1}{2}$ day field work, spring term.

The origin and distribution of forests with special reference to the forests of the United States. Field studies on the distribution of trees in relation to their environment. The genetic development of forests. The preparation of herbaria representing the local tree flora and forest herbs and shrubs.

Professor BREWER :—

63 *Meteorology and Forest Physiography.*

3 hrs. March 7 to April 6.

General conditions necessary to forests ; forests as related to temperature and its range ; to rainfall and its range ; to excess of weather and climate ; to the mechanical and chemical nature of soil and ground water ; to the geological character of the surface ; to geographical features ; the geographical distribution of forests ; the aspects of forests as related to climate ; the geological history of forests ; forests in relation to public health, and the relations of forest physiography to history and civilization.

[Tuesday, Wednesday and Thursday.]

Mr. BOWERS :—

64 *Forest Administration and Law.*

The development of the public domain with reference to the creation of a forest policy by the United States and a consideration of laws relating thereto, including rules and regulations governing public lands, forest reserves and national parks.

Special consideration of the laws and decisions of the Federal and State Courts with reference to timber trespass, river driving, riparian rights, damages resulting from forest fires, etc.

Professor GRAVES :—

65 *History of Forestry.*

2 hrs. 1st half 2d term.

Rise of Forestry abroad and in the United States. Present practice of Forestry in foreign countries.

THE GEOLOGICAL SCIENCES

ELEMENTARY COURSES

Professor DANA :—

71 *Mineralogy and Crystallography.* 4 hrs. to count as 2 hrs.

Practical study of mineral species by means of blowpipe analysis and other methods : also, mathematical study of the forms of crystals.

Professor PENFIELD and Dr. FORD :—

72 *Determinative Mineralogy.* 3 hrs.

The object of this course is to gain familiarity with the common minerals together with facility in their identification. The subject is treated mainly from a chemical standpoint, and it is assumed that all who take the course have some familiarity with the principles of elementary chemistry. A portion of the time allotted to the course (about one quarter) is devoted to the study of simple chemical reactions performed both in the dry way with the aid of the blowpipe and in the wet way with reagents, and such tests are subsequently made the basis of the determination of mineral species. The mineralogical laboratory is open daily from 9-1 and (Saturdays excepted) from 2-5, and by devoting more than the allotted time to the subject the course may be extended to any desired extent.

73 *Crystallography and Descriptive Mineralogy.*

2 hrs. 1st half of 2d term, 3 hrs. 2d half of 2d term.

These two subjects are treated together, a group or class of crystals being first studied and then the mineral compounds belonging to that class. Instruction is given by means of lectures and practical demonstrations, the varieties of form and development of crystals being illustrated by means of glass and wooden models and a collection of natural crystals, while in descriptive mineralogy specimens from the valuable and extensive Brush Collection are studied.

For the benefit of those who can devote but one hour a week to these subjects, a course similar to the above, but necessarily abridged, is given each year, it being supposed that those who take the shortened course will be able to supplement it by reading and study so as to make it practically an equivalent to the longer one.

Professor PIRSSON :—

74 *Elementary Structural and Dynamical Geology.*

3 hrs. 1st half year.

This course in Geology is given partly by lectures and partly by recitations with the use of a text-book. It includes the elements of structural and dynamical geology, and these subjects are illustrated by maps, diagrams, photographs, lantern views and specimens. The course is designed to give a general knowledge of the subject and as an introduction to more extended geological studies.

Professor GREGORY and Assistant Professor BARRELL :—

75 *General Geology.* 2 hrs.

A course of lectures on the general principles of the science of geology. The structural features of the earth : the forces by which its present condition has been attained ; the past history of the earth including the evolution of living forms. Weekly excursions.

Professor GREGORY, Assistant Professor BARRELL, and Dr. ROBINSON :—

76 *Geology with field and laboratory work.* 1 hr.

This course is designed to supplement the exercises of the course in General Geology, by the addition of field and laboratory work.

Professor PIRSSON :—

77 *Elementary Petrology.* 1 hr. 1st half 2d term.

Lectures of an elementary nature on the characters, origin, and classification of rocks with reference to their geologic relations and economic properties. Illustrated by diagrams, specimens, etc.

Professors GREGORY and KELLER, and Mr. BISHOP :—

78 *Physical and Commercial Geography.* 3 hrs.

Maps and map-making ; the physical features of the land ; ocean ; climate ; the natural distribution of flora, fauna, minerals, etc. ; the condition of human life as affected by natural environment. Text-books and laboratory work.

Professor HEILPRIN :—

79 *Physical Geography.* 4 hrs. 1st term.

A study of regional (and political) geography in its physical relations, involving the consideration of climatic distribution and influence, productivity and resource, animal and plant migrations and habitat, avenues of trade and commerce, adaptation to environment, and explorations. The earlier portion of the course is supplemented by text-book study.

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Mr. TARR :—

80 *Meteorology.*

1 hr.

A study of the atmospheric factors which produce climate. Laboratory work will be conducted at the office of the United States Weather Bureau and will include the study of instruments, the making of weather maps, and methods of forecasting the weather.

ADVANCED COURSES

MINERALOGY

Professor PENFIELD :—

81 *Experimental Work in Crystallography.*

Daily.

The chief features of this course are the measurement of the angles of crystals with the reflection goniometer; the determination of symmetry; the plotting of the forms of crystals in the stereographic and linear projections; the calculation of axial ratios of crystals and of the symbols of their faces; and the drawing of crystal forms and combinations. For an elementary course, including a few examples in each of the six systems, a practical exercise (3 hrs.) once a week throughout the year is generally sufficient; the course may be lengthened and varied, however, to almost any desired extent. A knowledge of plane trigonometry is indispensable, and some experience in mechanical drawing is most desirable.

82 *Experimental Work in the Optical Properties of Minerals.*

Daily.

In this course the optical properties of crystals are studied and determined. Students learn to use the refractometer, total reflectometer, polariscope, polarizing microscope, axial angle apparatus and other optical appliances. A knowledge of optics is indispensable.

83 *Original Investigation in Mineralogy and Crystallography.*

Those who are sufficiently advanced may undertake research work in mineralogy and crystallography. Such work may be along the lines of analytical chemistry for determining the composition of minerals, or the crystallographic and optical properties of minerals may be studied. Material for investigation is available from the Brush Collection and the University Mineral Cabinet.

PETROLOGY

Professor PIRSSON :—

84 *Petrology.*

Daily.

(a) Study and determination of the rock-making minerals by optical and chemical methods. Includes the use of the petrological microscope.

(b) Systematic Petrography. History, origin, and classification of rocks, commencing with igneous types and passing into the crystalline schists, during which metasomatic and dynamic changes, including effects of dynamo-metamorphism, are taken up. The work is carried on mostly in the laboratory, with access to collections both of rocks and thin sections.

(c) Study of typical collections, with specimens and sections, of localities which have been investigated and described. The work is conducted with reading of the literature largely in original French and German publications.

(d) Original investigation. In sequence to (a), (b), and (c) some special object or locality may be made the subject of investigation. The work requires laboratory methods of determination, both chemical and microscopical, with consultation of the literature and usually work in the field. Material is available in the petrologic collections of the Sheffield Scientific School, but commonly such work is done upon material collected by the student in preparation of a thesis.

Only those whose previous training in mineralogy and geology has been sufficient to enable them to pursue the subject advantageously are admitted to this course.

STRUCTURAL GEOLOGY

Assistant Professor BARRELL :—

85 *Structural Geology.*

2 or 3 hrs.

An advanced course consisting of studies on the nature of chemical and dynamical agencies operating within the crust of the earth and their effects. Such subjects are taken up as : the causes and nature of weathering, lithification ; of joints, faults, folds, fissure veins, metamorphism and mountains. The exercises will consist of lectures, the study of geological literature and field and laboratory problems.

86 *Structural and Dynamical Geology.*

A study of folds, faults, veins, metamorphism, mountain making, etc., for those who wish to specialize in geology. Problems for investigation will be assigned with a view toward the preparation of theses for advanced degrees. A knowledge of petrography is required.

87 *Principles of Metamorphism and their Geological Application.*

In this course the chemical and physical principles of metamorphism and the structural problems presented by the action of dynamic metamorphism will be studied. New England offers a field admirably adapted for the purpose and still but little worked out in detail. The work will be about equally divided between the field and class-room. A good knowledge of general geology and of microscopic petrography is required.

Dr. HAYES :—

88 *Geology of the Southern Appalachians.*

The course will consist of a series of six lectures on the various phases of the geology of a special district, and is intended to illustrate the manner in which the work of the Federal Survey is conducted. The organization of the Survey and methods of field work will be discussed, together with the results obtained in physiographic, stratigraphic, structural, and economic geology.

PHYSIOGRAPHY

Professor GREGORY :—

89 *Physiography. A.* . 2 hrs.

A study of the origin, development and classification of land forms followed by a study of the physiography of the United States. The exercises will include lectures, field excursions, the reading of topographic maps and of geologic literature.

90 *Physiography. B.*

The origin, development and classification of land forms, as illustrated by some area selected for special study.

PALEONTOLOGY

Professor SCHUCHERT :—

91 *Stratigraphic Paleontology.* 4 hrs.

A course of laboratory work of not less than four hours each week throughout one year. The object of this course is to acquaint the student of geology with the leading fossils distinguishing the various formations of America, so that in areal work he may be able to locate the main fossil horizons in the geological column. This course is to be in connection with those branches of geology where the student has selected as his major subject a study other than paleontology, leading to the degree of Ph.D.

92 *Advanced Paleontology.*

The student will be required to present evidence of an elementary knowledge of chemistry, mineralogy, and botany, and proficiency in geology and zoology.

Paleontology in this course is the major study, leading to the degree of Ph.D., and consists of laboratory work and lectures. Not less than eighteen hours each week throughout two years and field work each summer of not less than four weeks, are necessary. The first year the student will study in detail the leading types of structures characterizing the various classes of invertebrates and vertebrates. This work will also include methods of preparation of material for study. The second year will be devoted to a detailed study of specimens, from the historical side, including their evolution and significance in paleogeography (the relation of land and seas during geologic time).

The thesis involving original investigation of some paleontologic subject should be begun the first year and may be limited to either the stratigraphic or the biologic side, or may embrace both of these aspects of paleontology, or may be limited to either the invertebrates or the vertebrates. The subject will be selected on conference with Professor Schuchert.

Dr. EATON :—

93 *Comparative Osteology.* 2 hrs.

An elementary course especially designed as a preparation for the study of Vertebrate Paleontology. Laboratory work in which the most important types of the vertebrate skeleton are studied and compared. Hours will be arranged by the instructor upon consultation.

94 *Vertebrate Paleontology.*

A course in the morphology of fossil vertebrates and the history and affinities of the most important living and extinct forms. Laboratory work and informal lectures. Hours arranged upon consultation.

GENERAL COURSES

Dr. ROBINSON :—

95 *Field Geology.*

6 hrs. to count as 3 hrs.

The course will consist of field work upon selected areas in the vicinity of New Haven, supplemented by lectures and laboratory exercises on the construction and use of topographic and geologic maps.

Dr. FORD :—

96 *Economic Geology.*

3 hrs. 2d term.

A lecture course, illustrated by the use of lantern slides and by specimens from the collection of Economic Geology. The course includes a discussion of the general features of ore bodies, with the theories of their formation together with descriptions of the most important and typical ore occurrences in North America. The occurrences and uses of the non-metallic minerals are also described. A knowledge of elementary mineralogy and geology is necessary.

Intercollegiate Appalachian Course.—A geological field course of five weeks duration is offered for 1905, as follows :

July 3-8.—Professor W. B. CLARK, of the Johns Hopkins University, on the Tertiary and Cretaceous Strata of the Coastal Plain of Maryland. July 10-15.—Professor W. M. DAVIS, of Harvard University, on the folded Palaeozoic Strata of the Susquehanna-Juniata district of Pennsylvania. July 17-22.—Professor T. C. HOPKINS, of Syracuse University, on the horizontal Palaeozoic Strata and Glacial Features of Central New York. July 24-29.—Professor H. P. CUSHING, of Western Reserve University, on the faulted Crystalline and Palaeozoic Rocks of the

Little Falls district, N. Y. July 31–August 5—Professor J. BARRELL, of Yale University, on the Metamorphic and Triassic Rocks of Western Connecticut.

Credit will be given by Yale University for other courses listed in the "Joint Announcement of Field Courses in Geology." A circular containing a description of these courses may be obtained by addressing Professor Gregory.

METALLURGY AND MINING ENGINEERING

Instruction in Mining and Metallurgy is in charge of John Hayes Hammond, M.A., Professor of Mining Engineering, and Louis Doremus Huntoon, Assistant Professor of Mining and Metallurgy. The HAMMOND METALLURGICAL LABORATORY of the Sheffield Scientific School is approaching completion and is devoted entirely to the subjects of Mining, Metallurgy, and Ore Dressing. It will contain well-equipped laboratories, research rooms and collections, as well as a departmental library and a museum illustrating the various features of the applied sciences. The laboratories have been planned to give a thorough training in the practical work of assaying and the treatment of ores, and will contain small sized dressing appliances for ore dressing on a commercial scale.

Further information concerning instruction in Mining Engineering will be found in the General Catalogue.

VII. MATHEMATICS

EUGENE L. RICHARDS, M.A.	CHARLES B. RICHARDS, M.A.
WILLIAM BEEBE, M.A.	A. JAY DuBOIS, Ph.D.
ANDREW W. PHILLIPS, Ph.D.	JAMES PIERPONT, Ph.D.
PERCEY F. SMITH, Ph.D.	SAMUEL E. BARNEY, C.E.
HENRY A. BUMSTEAD, Ph.D.	WILLIAM A. GRANVILLE, Ph.D.
HERBERT E. HAWKES, Ph.D.	EDWIN B. WILSON, Ph.D.
MAX MASON, Ph.D.	D. RAYMOND CURTISS, Ph.D.
EDWY L. TAYLOR, C.E.	

Connected with the department are the Seminary rooms, the Mathematical Laboratory, the Collection of Models, the Mathematical Club, the Engineers' Club.

The SEMINARY ROOMS, which are at 90 High street, may be used by all students in mathematics. The seminary rooms afford a place for students to meet for the discussion of mathematical questions, and for study. There is a good departmental reference library, and also a collection of drawings and models made by students of previous years illustrating various theories. Many of the lectures in this department of past years have been reported and are here to be found bound and ready for consultation.

The MATHEMATICAL LABORATORY occupies a commodious room on the floor below the seminary rooms. It is well equipped with tools and drawing instruments necessary to construct mathematical models. Students are given direction and advice for the proper and expeditious construction of models more or less elaborate, illustrating the subjects they are studying. Such models and drawings serve to develop the student's geometrical intuition as well as to make more clear the particular theory in hand. Students who expect to become teachers will find the laboratory most useful in acquiring facility in preparing simple models to illustrate subjects they may later have to teach.

The COLLECTION OF MATHEMATICAL MODELS is one of the most extensive in the country, and is constantly growing. Besides a very complete selection of plaster and thread models from Brill and Schilling, etc., the collection contains a large number of models illustrating the teaching of solid geometry, the theory of equations, and various kinematical principles, as well as the theory of twisted curves and surfaces which have been made under the direction of instructors of the department.

The MATHEMATICAL CLUB holds fortnightly meetings, at which are presented summaries of articles in current periodicals and recent works on pure and applied mathematics, descriptions and models of new apparatus, also papers containing the results of the original investigations of the instructors and advanced students in this department. All students are encouraged to prepare papers which, if not original, give a comprehensive survey of some field of mathematics, or treat from a new standpoint some question of general interest to the members of the club.

The ENGINEERS' CLUB meets monthly in North Sheffield Hall for the reading and discussion of papers on subjects relating to the different branches of engineering.

Lectures are occasionally given before the club by professional experts.

GENERAL STATEMENT

Courses offered in the department of Mathematics fall under three heads, Pure Mathematics, Applied Mathematics, and Engineering.

I. In Pure and Applied Mathematics, a division of courses is made as follows :

INTRODUCTORY COURSES.

ADVANCED COURSES.

ONE-HOUR COURSES.

The Introductory Courses are intended for students who have completed a year's work in the Calculus, and who wish to obtain a broad and thorough knowledge of the elements of higher mathematics.

The Advanced Courses, to which the Introductory Courses are prerequisite and sufficient, are adapted to the needs of students specializing in mathematics and kindred branches. Special topics are treated in detail and the results of modern research are presented, the aim being to develop the student's powers and equip him for independent investigation.

The advanced student will naturally specialize in some particular subject or group of subjects which will become the field of his special research. The acquirement of a broad knowledge of modern methods and results in the various fields of mathematics is thus rendered difficult. To meet this difficulty a number of courses, designated as One-Hour Courses, will be offered, each consisting of one lecture a week throughout the year. In these the range of topics of the Advanced Courses will be covered in a less special way, and in addition certain subjects will be treated which do not naturally lie within the scope of any of the Advanced Courses. The object sought in all One-Hour Courses is to give the student breadth of information without making too great demands upon his time.

Titles of courses offered are as follows:

*Introductory Courses.**

- | | |
|-----------------------------------|--------------------------------|
| 1 Algebra. | 7 Geometrical Transformations |
| 2 Advanced Calculus. | of the Plane and of Space. |
| 3 Functions of Real Variables. | 8 Differential Geometry. |
| 4 Functions of Complex Variables. | 9 Teachers Course in Geometry. |
| 5 Differential Equations. | 10 Analytic Mechanics. |
| 6 Analytic Geometry. | 11 Mathematical Physics. |

* Each Introductory Course is offered every year, with the exception of 7 and 8, which are given in alternate years.

Advanced Courses.

- | | |
|---|---|
| 12 Theory of Numbers. | 22 Ordinary Differential Equations. |
| 13 Finite Groups and Galois' Theory. | 23 Advanced Analytic Geometry. |
| 14 *Elliptic Functions. | 24 Differential Geometry. |
| 15 *Advanced Algebra. | 25 *Continuous Groups of Transformations. |
| 16 Linear Associative Algebra. | 26 Geometry of Contact Transformations. |
| 17 *Partial Differential Equations. | 27 *Theoretical Mechanics. |
| 18 Real Solutions of Linear Differential Equations. | 28 *Celestial Mechanics. |
| 19 Theory of Potential. | 29 Physical Optics. |
| 20 Calculus of Variations. | 30 *Electricity and Magnetism. |
| 21 *Harmonic Analysis. | 31 Thermodynamics. |

One-Hour Courses.

Among the One-Hour Courses, other than those which run parallel with and supplement the Advanced Courses, may be mentioned: Theory of Aggregates†, Invariants and Algebraic Forms†, Functional Equations†, Geometric Analysis, Group Concept, Automorphic Functions, Theory of Algebraic Curves, Foundations of Geometry, Non-Euclidean Geometry, Divergent Processes, Theory of the Top, Geometrical Constructions and Quadrature of the Circle, Calculus of Probabilities, Hydrodynamics†, Asymptotic Solutions of Ordinary Differential Equations, Taylor's Series and the Problem of Analytic Continuation†.

DESCRIPTION OF COURSES

INTRODUCTORY COURSES

Assistant Professor HAWKES :—

- 1 *Algebra.* 2 hrs.

Elementary theory of complex numbers, elementary properties of equations, transformation, location and approximation of roots, solution of cubic, biquadratic and reciprocal equations; roots of unity, symmetric functions, elimination, determinants, continued fractions, polynomials and divisibility.

* Offered in 1905-1906.

† Offered in 1905-1906.

Dr. WILSON :—

2 *Advanced Calculus.* 2 hrs.

Partial differentiation and change of variable, series of constants and functions, the simpler differential equations, definite integrals and methods of transformation and computation, Beta and Gamma functions, Fourier's series, and the elementary necessary conditions of the calculus of variations.

Professor PIERPONT :—

3 *Functions of Real Variables.* 2 hrs.

Number concept, limits, continuity and discontinuity of functions, differentiation and integration, infinite series and products.

4 *Functions of Complex Variables.* 2 hrs.

General theory from the standpoint of Cauchy and Riemann, study of algebraic, elliptic, gamma, hypergeometric and Bessel's functions.

Assistant Professor HAWKES :—

5 *Differential Equations.* 1 hr.

Elementary methods of integration with solution of problems by the students, applications to geometry and mechanics, geometric study of solutions of equations of the first order.

Professor PIERPONT :—

6 *Analytic Geometry.* 2 hrs.

Homogeneous coördinates, ideal elements, analytic and synthetic treatment of conics and quadrics, collineation and correlation, algebraic curves, cubic and quartic curves.

Professor SMITH :—

[7 *Geometrical Transformations of the Plane and of Space.* 2 hrs.

Proprieties of Euclidean transformations, collineations, correlations, inversions, dilatations and birational transformations, including resolution and composition into groups.

Omitted in 1905-1906.]

Dr. GRANVILLE :—

- 8 *Differential Geometry.* 2 hrs.

Parametric representation of plane and skew curves and surfaces, theory of contact, curvature, differential invariants, intrinsic equations, trajectories, conformal and spherical representation, map projection.

Assistant Professor HAWKES :—

- 9 *Teachers Course in Geometry.* 2 hrs.

The nature of geometric proof, significance and dependence of axioms, the parallel axiom, the relation between arithmetic and geometry, geometrical constructions and quadrature of the circle.

Dr. WILSON :—

- 10 *Analytic Mechanics.* 2 hrs.

Application of the calculus to the solution of problems on motion and equilibrium of a point, and of a rigid body.

- 11 *Mathematical Physics.* 2 hrs.

Elements of the kinetic theory of gases, thermodynamics, vector fields, electricity and magnetism, elasticity.

ADVANCED COURSES

Professor PIERPONT :—

- [12 *Theory of Numbers.* 2 hrs.

Divisibility, congruences, quadratic residues, Diophantine equations, quadratic forms, algebraic numbers.

Omitted in 1905-1906.]

- [13 *Finite Groups and Galois' Theory.* 2 hrs.

Substitution groups, abstract groups, linear groups, the icosahedron, Galois' theory, solution of the quintic, geometrical applications.

Omitted in 1905-1906.]

- 14 *Elliptic Functions.* 2 hrs.

Functions of Jacobi and Weierstrass, transformation theory, modular functions, applications to geometry and mathematical physics, introduction to the theory of Abelian functions.

Assistant Professor HAWKES :—

- 15 *Advanced Algebra.* 2 hrs.
Systems of linear equations, linear transformations, invariants, quadratic forms, elementary divisors, theory of elimination.
- [16 *Linear Associative Algebra.* 2 hrs.
Comparative study from the various points of view suggested by the theory of bilinear forms, matrices, continuous groups, and the work of Benjamin Peirce.
Omitted in 1905-1906.]

Dr. MASON :—

- 17 *Partial Differential Equations.* 2 hrs.
Linear equations of the first and of higher orders, complete systems, systems in involution, theory of characteristics, Pfaff's problem, equations of Monge and Ampère.
- [18 *Real Solutions of Linear Differential Equations.* 2 hrs.
General treatment of boundary value problems, oscillation theorems for ordinary differential equations, partial differential equations of the second order of elliptic, parabolic and hyperbolic types.
Omitted in 1905-1906.]
- [19 *Theory of Potential.* 2 hrs.
General study of the potential equation and the properties of harmonic functions, with special attention to Dirichlet's problem.
Omitted in 1905-1906.]
- [20 *Calculus of Variations.* 2 hrs.
Weierstrass' methods in parametric and non-parametric form, isoperimetric problems, double integrals, existence theorems following Hilbert.
Omitted in 1905-1906.]

Dr. CURTISS :—

- 21 *Harmonic Analysis.* 2 hrs.
Solution of the boundary value problem of mathematical physics in special cases, expansion of functions in Fourier's series, spherical harmonics, Bessel's and allied functions, application to distribution of temperature and potential, vibration of cords and membranes.

- [22 *Ordinary Differential Equations.* 2 hrs.

The analytic character of solutions of linear and algebraic equations treated from the standpoint of the theory of functions ; special study of particular equations, as the hypergeometric, Bessel's, Riccati's, etc.

Omitted in 1905-1906.]

Professor SMITH :—

- [23 *Advanced Analytic Geometry.* 2 hrs.

Singularities of curves and surfaces, geometry of reciprocal radii, line geometry and the spherical geometry of Sophus Lie.

Omitted in 1905-1906.]

- [24 *Differential Geometry.* 2 hrs.

Invariant theory of binary quadratic differential forms, equations of Gauss and Codazzi, theory of applicability, infinitesimal deformation, rectilinear congruences, orthogonal systems.

Omitted in 1905-1906.]

- 25 *Continuous Groups of Transformations.* 2 hrs.

A study of Sophus Lie's theory of finite continuous groups, and applications to ordinary differential equations.

- [26 *Geometry of Contact Transformations.* 2 hrs.

A study of contact transformations following Sophus Lie, with applications to partial differential equations.

Omitted in 1905-1906.]

Dr. WILSON :—

- 27 *Theoretical Mechanics.* 2 hrs.

Study of the mechanics of rigid and elastic bodies, with the solution of numerous problems by the students.

Professor BEEBE :—

- 28 *Celestial Mechanics.* 2 hrs.

Determination of parabolic and elliptic orbits, computation of an ephemeris and reduction of observations, theory of perturbation with numerical applications.

Dr. WILSON :—

- [29 *Physical Optics.* 2 hrs.

Comparison and development of the different theories.]

Assistant Professor BUMSTEAD :—

30 *Electricity and Magnetism.* 2 hrs.

Maxwell's Treatise will be read by the students, the lectures serving to explain the difficult points and to show the relation between the classical theory and the present point of view developing from the researches of J. J. Thomson, Larmor, Lorentz and others.

[31 *Thermodynamics.* 2 hrs.

Properties of matter from the standpoint of energy. Discussion of the memoirs of Willard Gibbs.

Omitted in 1905-1906.]

ONE-HOUR COURSES

The following courses are offered in 1905-1906 :

Professor PIERPONT :—

32 *Theory of Aggregates.* 1 hr.

Dr. MASON :—

33 *Functional Equations.* 1 hr.

34 *Hydrodynamics.* 1 hr.

Dr. CURTISS :—

35 *Invariants and algebraic forms.* 1 hr.

36 *Taylor's Series and the problem of Analytic Continuation.* 1 hr.

Mr. TAYLOR :—

37 *Scientific Computation.* 1 hr.

Professor C. B. RICHARDS :—

MECHANICAL ENGINEERING.

This course, arranged for candidates for the degree of Mechanical Engineer, is open also to special graduate students, who are allowed in certain cases to take selected parts. The leading topics are :

38 *Applied Mechanics.*

Including graphical methods in applied kinematics, and in the investigation of mechanisms working with friction ; graphical determinations of the accelerations of the moving parts of machines ; the strength of materials as affecting the proportions of machine elements; the applications of the principles of hydraulics to the construction and working of turbines and pumps.

39 *Thermodynamics.*

Applications to the compound steam-engine, air compressors and compressed air motors, engines worked by volatile vapors, refrigerating machines, the warming and ventilation of buildings.

40 *Machine-Design.*

In this course the student is engaged in practical exercises under the guidance of the professor in charge, investigating machinery, the designing and making of working-drawings, specifications, and estimates for machines and manufacturing plant. In addition to the study of machines in general, one of the following subjects (at the option of the student) receives particular attention: (a) Marine engineering ; (b) Railway machinery ; (c) Pumping machinery and plant ; (d) Machinery and plant for manufacturing. The student is required to make complete drawings, from new designs, of at least one important piece of machinery under one of these subjects. A compound marine engine and boilers, a locomotive, a turbine driving a centrifugal pump, a blowing engine for an iron furnace, are examples.

Candidates for the degree of Mechanical Engineer are required to take also a course in mathematics, to sustain a final examination, and to present a satisfactory thesis on a subject approved by the professor in charge of the course.

Professor DuBois :—

CIVIL ENGINEERING.

This course offers instruction for advanced graduate students as well as for those students who are regular candidates for the degree of Civil Engineer. It embraces the following topics :

41 *Mechanics of Engineering.*

3 hrs.

Including the application of kinematics, statics, and kinetics to engineering problems.

42 *Construction and Design.*

3 hrs.

Including the strength and properties of materials.

Candidates for the degree of Civil Engineer are required to take, in addition, a selected course in mathematics and practical astronomy, and when the facilities in the physical laboratory permit, a course of laboratory work under the superintendence of the professors in charge. They are also required to sustain a final examination, and to present a satisfactory thesis upon a subject approved by the professor in charge of the course.

To special students, not candidates for the degree of Civil Engineer, a selection of special topics is allowed.

Assistant Professor BARNEY :—

43 *Geodesy and Practical Astronomy.*

2d term.

Methods of observation ; theory of least squares, adjustment of observations. The study of practical astronomy embraces the use of the sextant and engineer's transit for determining time, latitude, azimuth, and needle variation.

44 *Railway Surveying.* Three weeks in June and July.

A preliminary line for a railroad is run out, and from the contour map so obtained a final line is located, cross-sectioned, and estimates are made for construction. The field-work begins the 19th of June and occupies the entire time for three weeks.

45 *Sanitary Engineering.*

a. *Water Supply.*

1st term.

Methods of collecting and distributing water. Designing of reservoirs, pipe systems, and filtration plants.

b. *Sewerage.*

2d term.

Design and construction of sewer systems, sewage disposal plants, etc.

Assistant Professor TRACY :—

46 *Graphic Statics.*

A rapid review of fundamental principles, followed by a discussion of those problems in which the methods of Graphic Statics can be used to advantage.

C. THE SOCIAL SCIENCES, HISTORY, PHILOSOPHY, AND EDUCATION

VIII. THE SOCIAL SCIENCES, HISTORY, AND LAW

ARTHUR M. WHEELER, LL.D.	D. CADY EATON, M.A.
SIMEON E. BALDWIN, LL.D.	CHARLES H. SMITH, LL.D.
WILLIAM G. SUMNER, LL.D.	THEODORE S. WOOLSEY, LL.D.
GEORGE B. ADAMS, Ph.D., Litt.D.	HENRY W. FARNAM, R.P.D.
WILLISTON WALKER, Ph.D., D.D.	EDWARD G. BOURNE, Ph.D.
IRVING FISHER, Ph.D.	GUY S. CALLENDER, Ph.D.
FREDERICK WELLS WILLIAMS, B.A.	HENRY C. EMERY, Ph.D.
CLIVE DAY, Ph.D.	OLIVER H. RICHARDSON, Ph.D.
ALBERT G. KELLER, Ph.D.	WILLIAM B. BAILEY, Ph.D.
PHILIP P. WELLS, Ph.D.	GUY STANTON FORD, Ph.D.
GEORGE GRANT MACCURDY, M.A.	HENRY B. LEARNED, M.A.
JOHN P. NORTON, Ph.D.	

A BIBLIOGRAPHY OF ECONOMIC AND KINDRED SUBJECTS is maintained by the instructors in Economics, and is available to students in the University Library. The department of Economics also collects statistical charts, tables and slides, which are preserved in E, Osborn Hall.

THE BOOCOCK LIBRARY (founded in 1896 by Mr. and Mrs. S. W. Boocock) is a department library in the Social Sciences, which supplies students with the most rare and special works in those subjects which the University Library does not contain. Any books needed by special students will be obtained. Students of all degrees of advancement will find reference books in the Boocock Library, and are invited to apply for access to it to Prof. Sumner.

THE ANTHROPOLOGY CLUB meets fortnightly for papers and discussions in Anthropology (Historical and Somatic), Ethnology, Sociology, and Demography.

THE POLITICAL SCIENCE CLUB, comprising the graduate students and instructors in the social sciences, has its

headquarters at 11 White Hall, which are open to members at all times. The department library there installed contains a collection of economic works generally required by advanced students. Fortnightly meetings are held during the academic year. Announcement of the subjects discussed is made in the University Bulletin.

Opportunities are given students to visit such charitable and penal institutions and agencies of social betterment as are in New Haven, or within easy access of it.

The HISTORICAL SEMINARY ROOM, No. 90 High street, contains a reference library to which graduate students may have access at all hours.

The HISTORICAL CLUB meets fortnightly for the reading and discussion of papers and for reports on current periodicals.

Professor SUMNER :—

*1 *The Science of Society.* 2 hrs.

A course with text-book and lectures in Systematic Sociology (Sociology).

[Monday and Friday, 8.30 A. M.]

[2 *Anthropology.* 2 hrs.

A careful study of Ranke's *Der Mensch* (2d ed.), with an examination of the separate topics by means of all the appropriate material.

[Monday, 10.30 A. M.; Wednesday, 9.30 A. M.]

Omitted in 1905-1906.]

[3 *The Self-Perpetuation of Society.* 2 hrs.

(Section II of Systematic Societology.) An historical and ethnological study of the evolution of the *Marriage Institution*; *mores*, taboo, idealization. The *Family*; its forms, parenthood, kinship, status of woman. Comparative legislation on domestic relations. *Population*. The history, law and policy of population.

[Thursday and Friday, 10.30 A. M.]

Omitted in 1905-1906.]

4 *The Mental Reactions.* 2 hrs.

(Section IVa of Systematic Societology.) An ethnological study of the development of the *Mental Processes* and of the growth and contents of the *Mental Outfit* of the human race in the earlier stages. Ghost-fear, daimonism, otherworldliness, knowledge and pseudo-knowledge, the aleatory element, world-philosophy, *mores*, codes, taboo, therapeutics, etc.

5 *The Beginnings of the Industrial Organization.* 2 hrs.

An ethnological study of the industrial organization from its earliest beginnings. Division of labor between the sexes and the special functions of each; regulation of industry; slavery; formation of capital; discoveries and inventions; domestication of animals and plants; money, etc.

Professor FARNAM :—

6 *The Principles of Public Finance.* 2 hrs.

A systematic treatment of the subject of government expenditure, government income, and government debt, illustrated by references to the financial statistics and experience of modern states.

[Tuesday and Thursday, 8.30 A. M.]

[7 *Social Politics.* 2 hrs.

A critical examination of the results of legislation designed to strengthen the economic position of the weaker social classes.

Omitted in 1905-1906.]

[8 *Pauperism and Crime.* 1 hr.

A study in social pathology, in which the causes of, and the leading methods of dealing with, pauperism and crime are treated historically and critically.

Omitted in 1905-1906.]

9 *The Modern Labor Movement.* 2 hrs.

An historical study of the efforts made by wage workers to improve their condition, together with a critical examination of the economic theories which have been developed in support of the movement. The lectures will deal mainly with the 19th century, and will include the growth of Socialism, Labor Organizations, Labor Representation, and Labor Legislation. The study of the literature of the subject at first hand will also be undertaken by the student.

[Wednesday and Friday, 8.30 A. M.]

Professor IRVING FISHER :—

- 10 *Theory of Prices and Price Levels.* 2 hrs.

A study of the determination of prices, rents, and wages, and of the relation of money and circulating credit to price levels.

[Tuesday and Thursday, 9.30 A. M.]

- [11 *Theory of Distribution.* 2 hrs.

This includes, besides the conventional "distribution" into rent, wages, profits, and interest, the study of the causes which divide society into the classes of rich and poor and intermediate groups.

Omitted in 1905-1906.]

Professor CALLENDER :—

- 12 *Economic History of the United States.* 2 hrs.

The lectures in the course are designed to give a general account of the economic evolution of this country from its beginning as a simple agricultural and trading community forming a part of the larger economic unit of the British Empire, up to the highly organized industrial society of the present day. The origin and development of the different features of our economic organization will be treated ; the more important economic and social problems with which the American people have had to deal will be discussed ; and the part which economic influences have played in moulding American society and especially in determining the course of American politics will be shown. Collateral reading will supplement the lectures and each student will make a thorough investigation of at least one subject during the year under the direction of the instructor.

[Tuesday and Thursday, 5.00 P. M. ; second term, 3.00 P. M.]

Professor EMERY :—

- *13 *Elementary Economics.* 1 or 3 hrs.

Lectures, one hour a week. Two hours a week will be occupied by quiz-exercises in small sections.

Primarily intended for undergraduate students.

[Lecture Wednesday, 11.30 A. M.]

- 14 *Commerce and Commercial Policy in the Nineteenth Century.* 2 hrs.

A study of the growth of international trade and the changes in commercial policy, especially in the leading countries of Europe.

[Tuesday and Thursday, 12.30 P. M.]

- [15 *History of Economics, Part I.* 2 hrs.

The history of economic ideas, with special reference to economic policy, from the Middle Ages to the middle of the nineteenth century. Lectures and readings in contemporary authors.

Omitted in 1905-1906.]

- 16 *History of Economics, Part II.* 2 hrs.

A continuation of the above course, given in alternate years. It deals with the later reactions from the Classical School, protectionism, socialism and the historical school.

[Monday and Friday, 12.30 P. M.]

Assistant Professor DAY :—

- 17 *Economics and Politics, Modern Europe.* 2 hrs.

A study of the economic organization of the different states of Europe, in its relation to domestic and foreign politics. Lectures and assigned reading.

- 18 *Economic History.* 2 hrs.

Development of the economic organization in Europe in its relation to the political organization : for advanced students in economics and history. Lectures, and assigned work in secondary and original sources.

Assistant Professor BAILEY :—

- *19 *Elementary Statistics.* 2 hrs.

The principal statistics of sociology and economics are studied, and the manner of conducting a statistical investigation is explained.

[I, Tuesday and Thursday, 11.30 A. M.]

[II, Tuesday and Thursday, 12.30 P. M.]

- *20 *American Social Conditions.* 2 hrs.
A study of immigration, the growth and concentration of population in cities with the attendant dangers. The liquor question, the criminal, and the Negro.
[Wednesday and Friday, 9.30 A. M.]
- 21 *Labor Problems.* 1 hr.
The conflicts between labor and capital and the methods employed to obtain industrial peace.
[Tuesday, 4.00 P. M.; second term, 2.00 P. M.]

Assistant Professor KELLER :—

- *22 *Anthropology.* 2 hrs.
This course is introductory to course 1, offered by Professor Sumner. Text-books on Anthropology and Ethnography and lectures on Darwinian evolution, with its application to man and human society.
[Tuesday and Thursday, 8.30 A. M.]
- 23 *Culture-History.* 2 hrs.
The course will consist mainly in the critical reading of Lippert's *Kulturgeschichte* (2 vols., Stuttgart, 1887), for the double purpose of acquiring an intimate knowledge of its subject-matter, and of comparing it with other works as a scientific construction. Informal instruction will be given concerning mechanical aids to research, bibliography, etc.
- 24 *Colonization (Economic and Social).*
Colonization as a sociological and ethnological process: the formation of new societies; the contact of races; the dissemination of culture. A preliminary sketch of ancient and mediæval commerce and colonization, followed by a closer study of the experience of several of the colonizing states of modern times. Emigration; colonial trade; frontier society; the native question; etc.
[Tuesday and Thursday, 10.30 A. M.]
- [25 *Ethnology.* 2 hrs.
A study of existing nations and tribes; their manners, customs, etc.; analysis and comparison of national traits. Based primarily upon comprehensive reading in ethnography; supplemented with lectures, papers, and the use of all the illustrative material that may be available.
Omitted in 1905-1906.]

Professor FERRIS and Assistant Professor KELLER :—

26 *Somatic Anthropology.* 3 hrs.

The same as 22 with the addition of a third hour on Somatic anthropology by Professor Ferris. In this third hour a more special treatment of man as an animal will be given. The main facts of man's embryology as related to that of the animal kingdom in general, and the facts of the adult structure which show his relation to other animals. Vestigial organs, variations of structure and their significance, body proportions, general adaptation to environment, etc. Text-books and lectures.

[Tuesday and Thursday, 8.30 A. M.; Thursday, 3.00 P. M.]

Assistant Professor NORTON :—

*27 *Trade Statistics.* 2 hrs.

The condition of trade viewed from the standpoint of (i) the international movement, (ii) bank clearings, (iii) the money supply, (iv) the outlook for the harvests, and (v) earnings of corporations. Crop forecasts; visible supplies; etc.

[Monday and Friday, 5.00 P. M.]

[28 *Interpolation.* 2 hrs.

Methods of fitting curves to series of statistics in analysis of relations among variables; also the theory of correlation of two or more variables. The methods of Pearson, Yule, and Galton will be discussed.

Omitted in 1905-1906.]

[29 *Corporation Economics.* 2 hrs.

The anatomy of a corporation; its incorporation and organization, advantages and disadvantages treated from the economic standpoint; the formation of industrial combinations and the statistical basis for the capitalization of net earnings.

Omitted in 1905-1906.]

*30 *Railroads.* 2 hrs.

Economic theory of railroad location; financial and industrial problems; railway consolidation and taxation; the Interstate Commerce Commission and its relation to pooling and discrimination; analysis of railroad reports and statistics.

[Monday and Friday, 4.00 P. M.]

Mr. MACCUDY :—

31 *Physical Anthropology.* 2 hrs. 1st half-year.

Lectures and demonstrations. A study of man's position in the zoölogical scale and his structure from the racial standpoint, including characters of race, age, and sex, individual variations, and pathological conditions. In the laboratory, students will have access to suitable collections as well as practice in the use of apparatus.

[Hours to be arranged.]

32 *Prehistoric Anthropology.* 2 hrs. 2d half-year.

Man's place in the geological scale. Physical characters of the earliest known races, their environment and stages of culture. Paleolithic, Neolithic, and Bronze Ages, Hallstatt period and on to historic times. Illustrated by original specimens from the Museum collections and by casts, photographs, etc.

[Hours to be arranged.]

Mr. JOHNSTON :—

33 *Insurance.* 2 hrs.

The history and statistics of the development of insurance; the theory of chances and its application to the calculation of insurance premiums; varieties of policies; the economic influence and importance of insurance.

Text-books: The lectures delivered in this course during 1903-1904; T. E. Young, *Insurance*.

[Monday and Friday, 5.00 P. M.; second term. 3.00 P. M.]

Professor S. E. BALDWIN :—

34 *Constitutional Law.* 2 hrs.

Lectures with Cooley's *Principles of Constitutional Law* and the *Yale Cases on Constitutional Law*.

[Monday, 3.00 P. M., and Saturday, 9.30 A. M.]

Professor WOOLSEY :—

35 *International Law.* 2 hrs.

Lectures with written tests, upon the rules governing the intercourse of states, also upon certain topics in American diplomacy. Designed to explain international politics, to train in intelligent citizenship, to assist legal practice.

[Tuesday and Thursday, 10.30 A. M.]

HISTORY

Professors ADAMS and BOURNE :—

- 36 *Methods of Historical Research and Criticism.* 1 hr.

The first half of this course consists of a discussion of the principles of historical criticism, for which Langlois and Seignobos' *Introduction to the Study of History* will serve as an outline. Several typical problems of internal and external criticism will be examined by the class and thoroughly analyzed. The second half, conducted by Professor Adams, consists of practical exercises in the study of selected historical documents, so arranged as to furnish examples of all the important points of method. The weekly exercises in this course may occupy two hours.

[Monday, 4.00 P. M.]

For a course in Latin Palaeography see Latin, course I, 34.

Assistant Professor F. W. WILLIAMS :—

- *37 *Ancient Oriental Nations from the earliest times.* 2 hrs.

A comprehensive survey of the beginnings of civilization, and its development among the principal nations of antiquity, including Babylonia, Assyria, Egypt, Phoenicia, and Media. This course illustrates the connection of Biblical and profane history, discusses the origin of political and social institutions, religions, the arts and sciences, and the Asiatic sources of European civilization, and constitutes an introduction to the study of history.

[Monday and Wednesday, 12.30 P. M.]

Professor PERRIN :—

- 38 *History of Greece to the Roman Conquest.* 2 hrs.

A detailed and systematic study of the political, intellectual, and artistic history of the ancient Hellenes, with suitable illustrations from their literature and monuments.

[Tuesday and Thursday, 3.00 P. M.]

Professor WALKER :—

- 39 *General Church History.* (1st Course.) 3 hrs.

The aim of this course for the year 1905-6 is to present an outline of Church history from the beginnings of Christianity

to the end of the great Papal schism. Special attention is paid to the spread of Christianity, the conversion of the Roman Empire, Monasticism, the effects of the Germanic invasions, and the efforts of the Church for the Christianization of northern and eastern Europe, the rise of the Papacy, its conflict with the Empire; the Crusades; the Schoolmen and their influence; the medieval universities; and the new religious forces of the thirteenth and fourteenth centuries.

[Wednesday, Thursday and Saturday, 9.30 A. M.]

40 *Christian Literature from Clement of Rome to Eusebius.*

1 hr.

In this course the attempt is made to familiarize the student with characteristic examples of the writings of the chief authors of the post-Apostolic period, and especially to gain a clear conception of Christianity as it was understood by them.

[Thursday, 10.30 A. M.]

Professor ADAMS:—

[*41 *Medieval History (first half).*

2 hrs.

From the beginning of the fourth to the tenth century. The subjects most fully discussed will be the fall of Rome; the spread of Christianity; the foundation and organization of the new German states; the beginning and growth of the papal power; the formation of the Frankish state; the rise and conquests of Mohammedanism; the empire and reforms of Charlemagne; and the separation of his empire into the modern states.

The development of civilization will be kept constantly in view throughout, and such institutions of both church and state as exerted an influence upon later times will receive especial attention.

Omitted in 1905-1906.]

[*42 *Medieval History (second half).*

2 hrs.

From the beginning of the tenth to the middle of the fifteenth century.

The earliest organization of the modern states; feudalism and feudal society, considered institutionally and economically; the Holy Roman Empire and the monarchical papacy; the crusades and their results; the growth of commerce and the rise of the third estate to political influence; the intellectual renaissance of the thirteenth century, with the beginning of universities and

the revival of Roman Law; the rise of England and France with contrasted constitutions, the conflict between them and the decline of Germany; and the beginning of modern diplomacy.

Omitted in 1905-1906.]

*43 *English Political History.* 2 hrs.

From the Saxon conquest to the nineteenth century. The history of institutions will not be studied; but pains will be taken to make clear the political conditions which influenced the growth of the constitution.

[I, Tuesday and Thursday, 3.00 P. M.]

[II, Tuesday and Thursday, 4.00 P. M.]

Professors ADAMS and WALKER:—

44 *Medieval Institutions.*

A two or three years' course. Not a lecture course. The seminary method will be employed throughout and large use will be made of the original material. A rapid reading knowledge of Latin, German and French is required. The object of the course is to make the student acquainted with the literature of the field, with the problems that are still unsolved, and with the sources which have been and must be used in their solution. In exceptional cases only will students be encouraged to take this course in their first year of graduate work.

a Professor ADAMS. 2 hrs.

The first year's course considers later Roman and early German institutions, and their combination in the Frankish state; the development of the papal power and its special institutions; the institutions of Charlemagne's empire; the origin of feudalism; and the beginnings of national governments.

b1 Professor WALKER. 1 hr.

Second year's course covering the French institutions of the Feudal period in general and with special reference to their development from Louis VI to Louis IX. The aim will be to trace the relations and powers of the various classes of the French people, the nobility, clergy, rural and city populations, and to consider the growth of the authority of the French monarchy during one of the most significant periods in its development; to discuss the methods by which the freedom of the lower classes was increased and the influence of the crown extended; and to examine the constitution and activities of the more important organ of government.

[b 2 Professor ADAMS.

2 hrs.

Second year's course with special reference to Norman and Angevin institutions in England. The course will open with a somewhat detailed study of feudal institutions of the tenth and eleventh centuries, and will then follow the institutional development in England from the Norman conquest to the establishment of parliament.

Omitted in 1905-1906.]

Assistant Professor F. W. WILLIAMS :—

*45 *Medieval Asia and the Mohammedan Conquest.* 2 hrs.

An outline history of Western Asia from the death of Alexander to the conquest of Constantinople, supplementary to the history of the Roman Empire and Medieval Europe. The course combines the study of text-books and recitations on Parthia, the Saracens and Ottoman Turks, with lectures and research work on special topics connected with the period. It shows the nature of Hellenistic influences in the East, their gradual effacement under Parthian and Persian rule, and their disappearance after the Arab conquest; it treats of the development of Christianity as an institution, of its political rôle and its struggles with Paganism and Islam. and of the antagonisms between Oriental and European civilization.

[Tuesday and Thursday, 11.30 A. M., C₁ O.]

Professor WALKER :—

46 *General Church History.* (2d Course.) 2 hrs.

This course is in continuation of course 39, but may be taken independently of it. Pursuing the same general method, its attempt is to trace the movements preparatory to the Reformation; to discuss the influence of the Renaissance and the discoveries; to examine the reformatory attempts within the Church; to follow in outline the story of the revolt from papal obedience in Germany, Switzerland, Scandinavia, France, the Netherlands, England and Scotland, and the Roman "Counter-Reformation"; and to inquire into the religious, political and social consequences of that revolt to the Peace of Westphalia on the European Continent and to the Toleration Act in England; to consider Pietism and Moravianism; the Wesleyan revival in its religious and philanthropic aspects; the begin-

nings of modern Protestant missions ; Rationalism ; the rise and development of modern German theology ; the several parties in the Church of England ; the English Dissenters ; Scottish divisions and reunions ; and the doctrinal and political development of Roman Catholicism to the present time.

- 47 *Four Eminent Theologians, Augustine, Aquinas, Calvin, Edwards.* 1 hr. 2d term.

In this course a brief outline of the life of each of these great theologians is given ; but the chief endeavor is to acquaint the student with their theological and philosophic significance. Characteristic portions of the writings of each will be examined.

Assistant Professor RICHARDSON :—

- *48 *The Renaissance and Reformation.* 2 hrs.

Both the Renaissance and the Reformation will be treated as intellectual movements and considered in their relations to the intellectual development of Europe. The study of the Reformation will embrace the leading problems of modern European history to the Peace of Westphalia.

[Tuesday and Thursday, 11.30 P. M.]

- *49 *Modern European History to 1789.* 2 hrs.

Considers such characteristic features of modern history as combined to produce the Europe of the French Revolution and are essential to the understanding of the history of the nineteenth century.

[Monday and Friday, 12.30 P. M.]

- [50 *French Constitutional History.* 1 hr.

A lecture course dealing with the characteristic institutions of the *Ancien Régime*. Bibliographical work will be required from the student.

Omitted in 1905-1906.]

- 51 *Studies in the History of Brandenburg-Prussia.* 1 hr.

Especial attention will be given to economic and constitutional developments under the Great Elector. Lectures, and the criticism of select documents upon special subjects.

Professor WHEELER :—

- 52 *History of Treaties, 1763-1815.* 1 hr.
[Wednesday, 5.00 P. M.]

- *53 *History of Europe since 1789.* 2 hrs.
Mainly political, introductory to European politics of our day.
[Tuesday and Thursday, 9.30 A. M.]

- 54 *Investigation of Special Topics in European History
from 1789 to 1815.* 1 hr.
A general knowledge of the period, and ability to read French
or German easily, are required.

Dr. FORD :—

- 55 *Seminary in Modern European History.* 1 hr.

The general topic for 1905-6 will be Prussia during the Revolutionary and Napoleonic era. The plan is to make a coöperative study of the conditions in Prussia preceding the collapse of the old order and the inauguration of the reforms of Stein, Hardenberg and Scharnhorst. The course will serve as an introduction to the critical and constructive use of sources in both French and German.

- *56 *History of Prussia in the Nineteenth Century.* 1 hr.

This course will cover the history of Prussia since Frederic the Great with special reference to the formation of modern Prussia, the unification of Germany and the work of Prince Bismarck, parties and problems in Prussia to-day. Lectures and readings.

Professor ADAMS :—

- *57 *English Constitutional History to the present time.* 2 hrs.

The purpose of this course will be to show how the Anglo-Saxon system of self-government arose, and how the chief features of the present English Constitution took form. Especial attention will also be given to the rise of judicial institutions, the organization of the courts, the introduction of the jury, the beginning and growth of the Common law, etc. The more important Constitutional documents will be discussed in detail.

While the course is of especial value to those who intend to study law, the interests of the general student will be kept in view.

At the close of the course some time will be given to a study of the present English constitution as practically operated.

During the year 1905-1906 political conditions of especial influence on constitutional growth will receive attention.

[Wednesday and Friday, 9.30 A. M.]

Assistant Professor RICHARDSON :—

- 58 *English History from the accession of the Tudors to the reign of William and Mary.* 2 hrs.

A research course extending through two years.

[a. First year, 1485-1603. Particular attention is paid to Henry VII and to constitutional developments under Henry VIII and Elizabeth.

Course a is not given in 1905-1906.]

b. Second year, 1603-1688. The reign of James I and the constitutional history of the Puritan Revolution will receive especial attention. The work will be largely based upon Prothero's *Statutes and Constitutional Documents*, and Gardiner's *Constitutional Documents of the Puritan Revolution*.

Professor WHEELER :—

- 59 *Constitutional and Political History of England since 1760.* 2 hrs.

Lectures and required reading.

Professor BOURNE :—

- *60 *American History [1492-1763].* 2 hrs.

This course will include the discoveries, the Spanish and French colonial systems in outline, the political and social development of the English colonies, and the conquest of New France.

[Tuesday and Thursday, 9.30 A. M.]

- *61 *American History [1763-1860].* 2 hrs.

The causes of the Revolution, the formation of the Union, the rise of parties, the development of democracy, the influence of expansion and of slavery on politics will be discussed.

[Monday and Friday, 10.30 A. M.]

62 *The American Revolution and the Formation of the Union.* 2 hrs.

After a brief survey of the English colonial system as it existed in the first half of the eighteenth century, the causes and progress of the Revolution will be taken up in detail. Considerable attention will be given to the political theories of the time, and to the influence of the Revolution in Europe.

In the second part of the course especial attention will be given to the political and economic forces making for a more compact union and to the contemporary political discussion.

[63 *Diplomatic History of the United States.* 2 hrs.

History of the foreign relations of the United States from the end of the Revolution to the close of the Civil War. Special attention is given to the relations with Spanish America and to the annexations of territory.

Omitted in 1905-1906.]

Professor C. H. SMITH:—

64 *American History (Constitutional).* 1 hr.

(a) A study of the Federal Constitution from the historical point of view, tracing the origin, purpose, and working of its principal provisions. Lectures and collateral reading, with an examination at the close of the course.

(b) An extended course of reading in speeches and writings of statesmen and jurists, and decisions of the Supreme Court, whereby the constitution has been expounded and developed; with inquiry into important phases of public opinion on the constitution. For individual study, with occasional reports and examinations, and an elaborate paper at the close of the course.

(This course may be made to count as one hour, or two hours, according to amount and character of work done.)

[Saturday 10.30 A. M., D. O.]

65 *United States since 1860.* 2 hrs.

The first half of the year will be given to a study of the Civil War. The second half to a study of Reconstruction, and some other important features of our history down to the present time. Either half of the course may be taken without the other, and when so taken will be counted as one hour for the year. A research course, with weekly reports and discussions.

[Tuesday, 10.30 A. M.—12.20 P. M., D. O.]

Mr. LEARNED :—

66 *The American Executive, 1780-1830.* 1 hr.

A course of investigation into the history of the Presidency, with some reference to the development of the Cabinet as an institution influencing public policy. It will include studies of the early conception of the office of President before the Convention of 1787, the beginnings of the Departments and of the Cabinet; the primacy of the Secretaries of State; Cabinet appointments and resignations; attempts to invade the executive; the phases of the purchase of Louisiana, and of the genesis of the Monroe Doctrine that illustrate the development of executive power.

Dr. P. P. WELLS :—

67 *The Southern States before 1860.* 1 hr.

A research course dealing primarily with social and economic conditions. The sources will be independently investigated and reports made upon such topics as agriculture and commerce, the movement of population, the slave trade, the material condition and legal status of the slave, free laborers, the slaveholding classes, etc.

Professor BOURNE :—

*68 *History of Spanish America, chiefly in the Nineteenth Century.* 1 hr.

A survey of the condition of the Spanish colonies, and of the struggle for independence, followed by an outline study of the history of several representative states and of their relations to the United States and Europe.

[Thursday, 11.30 A. M.]

Assistant Professor WILLIAMS :—

69 *Modern Asiatic History.* 2 hrs.

A course embracing successively the regions of India, Japan, China, and Central Asia, with particular regard to their history since the seventeenth century, their governments, and their relations with European powers. The culture, faiths, and sociology of existing nations in the Far East are here considered with a

view of interesting those whose historical knowledge is confined to the Western world. The course is designed to stimulate further reading by students in special topics suggested by the instructor, upon which written essays will be presented and discussed. It also offers an opportunity for those who contemplate missionary careers to acquaint themselves with the political and social conditions of the more important foreign missionary fields.

[Tuesday and Thursday, 12.30 P. M.]

***70 *European Colonies in Asia and Africa.* 2 hrs.**

The history of colonization as undertaken and systematized by European nations in modern times, especially in regions already populated. In connection with the causes leading to the acquisition of colonies, the development of the colonial administration of each of the great powers is treated in turn. The course will involve the investigation of special subjects assigned by the instructor and the critical discussion of brief theses written upon them.

(For the sociological aspects of modern colonization see course 24, given by Dr. Keller.)

[Monday and Wednesday, 3.00 P. M.]

71 *Diplomatic Intercourse with Asiatic Nations.* 2 hrs.

A special study of the relations between the states of Eastern Asia, Europe and America chiefly during the nineteenth century.

Professor BOURNE :—

[72 *Historiography in America.* 1 hr. 2d half-year.

A critical survey of historical writing and scholarship in America.

The principles of historical criticism applied, first, to narrative histories which are classed as sources and, second, to selected secondary authorities.

Omitted in 1905-1906.]

73 *Modern European and English Historiography.* 1 hr. 2d half-year.

History of modern historical literature and investigation from the middle of the eighteenth century. After a brief review of

the general condition of historical studies in the last century, the modern development of historical study in Germany, France, and England is examined and its progress followed in the representative works of historical scholarship down to our own time.

HISTORY OF ART

Professor D. CADY EATON :—

74 . *History of Art.*

2 hrs.

Assyrian, Egyptian, Greek, Roman, Gothic, and Renaissance Art. Lectures and recitations. Marquand and Frothingham's *History of Sculpture*; Hamlin's *History of Architecture*; Van-Dyke's *History of Painting*.

IX. PHILOSOPHY

GEORGE M. DUNCAN, LL.D. GEORGE B. STEVENS, D.D., LL.D.
E. WASHBURN HOPKINS, LL.D. CHARLES H. JUDD, Ph.D.
CLOYD N. McALLISTER, Ph.D.

COURSES IN THIS DEPARTMENT are offered in Introduction to Philosophy, Psychology, Logic, and Epistemology, Ethics, Metaphysics, Philosophy of Religion, History of Philosophy, and Philosophical Criticism.

The PHILOSOPHICAL SEMINARY ROOM, 4 Herrick Hall, is fitted up for the use of graduate students in Philosophy. It contains the Departmental Library, and may be utilized for purposes of study at all times.

The HEALY PHILOSOPHICAL LIBRARY, founded by a gift of \$10,000 from Mrs. Susie Healy Camp, of Hartford, as a memorial of her father, William Arnold Healy, is a departmental library for the Department of Philosophy. It is placed in the Philosophical Seminary room, and consists of 1,500 volumes, to which additions are constantly being made, besides the current philosophical and psychological periodicals. It aims to afford all the advantages of a well selected consulting library for the students of philosophy.

The PSYCHOLOGICAL LABORATORY of the Department is thoroughly equipped for both instruction and original research. In addition to the provisions for work in experimental psychology, there are sections for work in experimental pedagogy. Each student pursuing investigations is provided with space and apparatus. The results of accepted investigations are published in the *Yale Psychological Studies*.

The PHILOSOPHICAL CLUB, composed of the instructors in the Department and all graduate students who take courses in philosophy, holds regular meetings fortnightly, on Tuesday evening. It is designed to afford opportunity both for the presentation and discussion of the results of original research by its members, and also for hearing addresses and papers from distinguished authorities on philosophical subjects, who are not connected with the

Department as teachers. Addresses have been delivered before the Club by Professors Lloyd Morgan, John Watson, W. T. Harris, J. G. Schurman, William James, J. McKeen Cattell, Josiah Royce, Borden P. Bowne, John Dewey, and others.

[The following courses are offered for the year 1905-6, but it is hoped that still other courses may be announced later.]

Professor DUNCAN :—

The graduate courses offered below will be given according to circumstances and the needs of the graduate students actually in attendance.

1 *The Principles of Logic.* 1 hr.

A course treating of the more important problems connected with the nature and forms of reasoning and the conditions of proof, and including an examination of the assumptions and criteria of induction.

2 *Epistemology.* 2 hrs.

A systematic course, both critical and constructive, in the Philosophy of Knowledge. All the important problems of epistemology will be considered: knowledge as a mental process (the nature of knowledge); the relation of experience and reason (the origin of knowledge); phenomenalism and epistemological realism (the reality of knowledge of self, things, God); agnosticism and scepticism (the limits of knowledge); etc. Lectures, papers and discussion.

[Tuesday, 8.30-10.00 A. M., B, O.]

*3 *History of Philosophy.* 3 hrs.

A general course treating of the principal philosophical systems from the early Greeks down to the present day, with especial attention to the problems and conceptions relating to Knowledge and to the Theory of Reality.

[Monday, Wednesday, and Friday, 9.30-10.30 A. M., A, O.]

4 *Philosophical Criticism.* 2 hrs.

The instructor will read and critically discuss, with such students (not less than five) as may so desire, some one or more of

the great *masterpieces* of philosophical literature, giving especial attention to the problems of epistemology and metaphysics. Schopenhauer's *World as Will and Idea*, or Kant's *Critique of Pure Reason*, is suggested for 1905-1906.

[Thursday, 8.30-10.00 A. M., B. O.]

Professor STEVENS :—

- 5 *The Basal Principles of Christian Theology.* 1 hr.

A discussion of the philosophical and historical presupposition of the Science of Christian Belief.

[Tuesday, 10.30 A.M., E. D.]

- 6 *Theism.* 1 hr. 1st term.

The reading and discussion of Bowne's *Theism*.

[Monday, 3 P. M., E. D.]

- 7 *Philosophy of Religion.* 1 hr. 2d term.

The study of Edward Caird's *Evolution of Religion*, with essays and reviews.

[Monday, 3 P. M., E. D.]

Professor HOPKINS :—

- 8 *Comparative Religion.* 1 hr.

A course of weekly lectures through the year. These lectures take up the study of religion from the comparative point of view, treating of the underlying principles of religion as shown in the religious phenomena of different nations and races, from lower to higher forms of religious expressions. The course is divided into two parts. The first part, which will continue through the first term and a few weeks of the second term, will deal with the general principles of religious evolution. The second part, occupying the remainder of the second term, will be devoted to the study of special religions which illustrate these principles, the religions of China, India, Persia, Babylon, Egypt, etc. The lectures are open to all graduate students, members of the theological school, and Academic Junior and Senior classes.

Assistant Professor JUDD and Dr. McALLISTER :—

9 *Experimental Psychology (Laboratory Course).* 2 hrs.

A laboratory course in which the student carries on for himself a series of typical psychological experiments. Two hours a week are spent in laboratory exercises. After the exercises each member of the class is required to prepare a full report of his results, and of their psychological significance. A meeting of the class is held once a week for the critical discussion of the reports of the preceding week.

[Hours to be arranged.]

Assistant Professor JUDD :—

10 *Psychological Theory and Methods.* 3 hrs.

This course will consist of lectures on the development of psychological problems and methods, reports by members of the class on current discussions, and laboratory exercises. Admission to this course is conditioned upon a completion of course 1 or its equivalent.

[Monday and Friday, 3.00 P. M.; and a laboratory period of two hours to be arranged, 4 H. H.]

11 *Genetic Psychology.* 3 hrs.

A course of lectures, readings and reports dealing with the facts of mental development. The course will begin with a review of the biological theory of evolution and will then trace the radical change which has appeared in the processes of adaptation and selection with the increasing importance of mind. The two hours definitely announced coincide with the undergraduate course in this subject. Graduates who desire credit will be required to meet for an additional hour of reports on more extended readings. A reading knowledge of German and French is required for this part of the course.

[Tuesday and Thursday, 10.30 A. M., and an additional hour to be arranged with the class, 2 H. H.]

12 *Educational Psychology.* 1 hr.

A brief summary of those psychological principles which are most directly applicable to educational problems. This course is intended for students of pedagogy and will not presuppose any earlier study of psychology. It will consist of lectures and of readings from the instructor's *Genetic Psychology for Teachers*.

[Saturday, 10.30 A. M., 2 H. H.]

Dr. McALLISTER :—

13 *Experimental Pedagogy.* 1 or 2 hrs.

Part I. A course of lectures, demonstrations and reports, dealing with the results of experimental methods as applied to educational subjects. The topics treated will include: training of the senses, observation, memory, quickness of perception, writing, drawing, and fatigue.

[Saturday, 11.30 to 12.30 A. M., 2 H. H.]

Part II. A laboratory course of two hours in which the typical experiments discussed in the lectures will be performed by members of the class.

[Hours to be arranged.]

Part I may be elected without Part II.

14 *Psychology (Laboratory Equipment).* 1 hr.

This course is designed for those who are preparing to teach psychology, and who wish to become familiar with the selection and construction of apparatus, and the practical organization of a laboratory. Practical exercises in the construction of apparatus in wood and in metal will be given in the workshop. Typical lists of apparatus will be presented and methods of laboratory installation will be illustrated and discussed, with special reference to the needs of small laboratories. Especial attention will also be given to the selection of inexpensive apparatus and the performing of simple experiments, suitable for illustrative purposes in teaching the elements of psychology in normal schools, and in small colleges which do not possess a psychological laboratory.

[Hour to be arranged.]

X. THEORY AND PRACTICE OF EDUCATION.

E. HERSHEY SNEATH, Ph.D., LL.D.	ARTHUR M. WHEELER, LL.D.
CHARLES H. SMITH, LL.D.	WILLIAM G. SUMNER, LL.D.
FRANK A. GOOCH, Ph.D.	THOMAS D. SEYMOUR, LL.D.
ANDREW W. PHILLIPS, Ph.D.	ALBERT S. COOK, Ph.D., L.H.D.
EDWARD P. MORRIS, L.H.D.	GEORGE B. ADAMS, Ph.D., Litt.D.
THOMAS D. GOODELL, Ph.D.	HENRY R. LANG, Ph.D.
EDWARD G. BOURNE, Ph.D.	GEORGE M. DUNCAN, LL.D.
FRANK H. BEEDE, B.A.	WILLISTON WALKER, Ph.D.
CHARLTON M. LEWIS, Ph.D.	WILLIAM LYON PHELPS, Ph.D.
HANNS OERTEL, Ph.D.	CHARLES F. KENT, Ph.D.
HERBERT E. GREGORY, Ph.D.	HERBERT E. HAWKES, Ph.D.
CHARLES U. CLARK, Ph.D.	CHARLES H. JUDD, Ph.D.
ALBERT G. KELLER, Ph.D.	ANDREW KEOGH, M.A.
HOLLON A. FARR, Ph.D.	CLOYD N. McALLISTER, Ph.D.

Courses in this department are designed to meet the needs of teachers, and of students who expect to teach. They treat of the psychology, philosophy, history, methodology, and practical work of education. The courses in psychology, introduction to pedagogy, and educational theory will prove helpful to teachers in all departments. The course in school organization and administration is intended for school principals and superintendents and for students expecting to enter upon the work of school organization and administration. A large number of courses in the several departments of study, and given by title below, are of especial interest to teachers.

All of the following courses, with the approval of the instructor, are open to students of the Graduate School who hold college or university degrees. Many of these courses are open to teachers and superintendents of schools who do not hold such degrees, on giving satisfactory evidence to the Dean of the Graduate School as to their ability to pursue these courses satisfactorily. Such persons will be enrolled in the catalogue as special students in the Department of Theory and Practice of Education.

The EDUCATIONAL CLUB will meet fortnightly. The results of researches in the educational field will be presented and discussed. Also critical reviews of the more recent literature in education will be given. A number of addresses will be delivered by men distinguished in educational work.

Professor SNEATH :—

- 1 *Introduction to Pedagogy.* 1 hr.

A study of the aims, problems, methods, divisions, principles, and literature of pedagogy.

[Thursday and Saturday, 8.30 A. M.]

- 2 *Educational Theory.* 2 hrs.

This course involves a careful study of the theoretical basis of education in the form of a critical examination of the educational systems of the following writers: Locke, Kant, Rousseau, Pestalozzi, Froebel, Herbart, and Spencer.

[Thursday and Saturday, 11.30 A. M.]

- 3 *Educational Research.* 2 hrs.

This course involves original investigation along special educational lines under the direction of the instructor.

[Friday, 4.00–5.30 P. M.]

- [4] *History of Education.* 2 hrs.

A study of the history of education in relation to the general development of the race. Special attention will be given to education as affecting the national life of a people.

Omitted in 1905–6.]

Assistant Professor JUDD :—

- 5 *Genetic Psychology.*

A course of lectures, readings and reports dealing with the facts of mental development. The course will begin with a review of the biological theory of evolution and will then trace the radical change which has appeared in the processes of adaptation and selection with the increasing importance of mind. The two hours definitely announced coincide with the

undergraduate course in this subject. Graduates who desire credit will be required to meet for an additional hour of reports on more extended readings. A reading knowledge of German and French is required for this part of the course.

[Tuesday and Thursday, 10.30 A. M., and an additional hour to be arranged with the class, 2 H. H.]

6 *Educational Psychology.*

A brief summary of those psychological principles which are most directly applicable to educational problems. This course is intended for students of pedagogy and will not presuppose any earlier study of psychology. It will consist of lectures and of readings from the instructor's *Genetic Psychology for Teachers*.

[Saturday, 10.30 A. M., 2 H. H.]

Dr. McALLISTER :—

7 *Experimental Pedagogy.*

Part I. A course of lectures, demonstrations and reports, dealing with the results of experimental methods as applied to educational subjects. The topics treated will include: training of the senses, observation, memory, quickness of perception, writing, drawing, and fatigue.

[Saturday, 11.30 A. M. to 12.30 P. M., 2 H. H.]

Part II. A laboratory course of two hours in which the typical experiments discussed in the lectures will be performed by members of the class.

[Hours to be arranged.]

Part I may be elected without Part II.

Mr. BEEDE :—

8 *School Organization and Administration.*

1 hr.

A practical course in school organization and administration. The following topics will be considered. The duties and powers of the school superintendent; the duties and powers of the school principal; qualifications of teachers; relation of the schools to the public; grading of schools; curriculum; discipline; school architecture; school hygiene and sanitation, etc. The public school system of the city of New Haven will be used as an observation school for the work of this course.

[Saturday, 9.30 A. M.]

LANGUAGE, LITERATURE, AND THE ARTS

Professor SEYMOUR, 9, <i>Greek Epic Poetry</i> ,	Course 4, p. 21
Professor GOODELL, 10, <i>Greek Composition</i> ,	Course 5, p. 21
Professor MORRIS, 11, <i>Vergil</i> ,	Course 39, p. 26
Assistant Professor CLARK, 12, <i>Latin Composition</i> ,	Course 53, p. 29
Professor OERTEL, 13, <i>Phonetics</i> ,	Course 67, p. 31
Professor OERTEL, 14, <i>Linguistics</i> ,	Course 69, p. 32
Professor KENT, 15, <i>Biblical Literature and History</i> ,	Course 37, p. 40
Professor LANG, 16, <i>Romance Languages and Literatures</i> ,	Course 20, p. 46
Assistant Professor FARR, 17, <i>German Literature of the XIXth Century</i> ,	Course 46, p. 51
Professor COOK, 18, <i>Encyclopaedia and Methodology of English</i> ,	Course 55, p. 52
Professor COOK, 19, <i>Theories of Poetry</i> ,	Course 56, p. 52
Professor COOK, 20, <i>Literary Types</i> ,	Course 58, p. 53
Professor COOK, 21, <i>Old and Middle English</i> ,	Course 62, p. 53
Professor LEWIS, 22, <i>Shakespeare</i> ,	Course 66, p. 54
Professor PHELPS, 23, <i>The Contemporary Drama</i> ,	Course 72, p. 56
Professor PHELPS, 24, <i>English Literature of the XVIIth Century</i> ,	Course 68, p. 55
Mr. KEOGH, 25, <i>Bibliography</i> ,	Course 76, p. 57

THE PHYSICAL AND NATURAL SCIENCES AND MATHEMATICS

Professor GOOCH,	
26, <i>Inorganic Chemistry</i> ,	Course 25, p. 68
Professor GREGORY,	
27, <i>General Geology</i> ,	Course 75, p. 79
Professor GREGORY,	
28, <i>Physiography</i> ,	Courses 89, 90, p. 82
Professor PHILLIPS,	
29, <i>Elements of Calculus</i> .	
Assistant Professor HAWKES,	
30, <i>Teachers' Course in Geometry</i> ,	Course 9, p. 91

THE SOCIAL SCIENCES, HISTORY, PHILOSOPHY

Professor SUMNER,	
31, <i>The Science of Society</i> ,	Course 1, p. 98
Professor SUMNER,	
32, <i>The Mental Reactions</i> ,	Course 4, p. 99
Professor EMERY,	
33, <i>History of Economics</i> ,	Course 16, p. 101
Assistant Professor KELLER,	
34, <i>Culture-History</i> ,	Course 23, p. 102
Professors ADAMS and BOURNE,	
35, <i>Methods of Historical Research and Criticism</i> ,	Course 36, p. 105
Professors ADAMS and WALKER,	
36, <i>Medieval Institutions</i> ,	Course 44, p. 107
Professor WHEELER,	
37, <i>History of Europe since 1789</i> ,	Course 53, p. 110
Professor WHEELER,	
38, <i>Constitutional and Political History of England since 1760</i> ,	Course 59, p. 111
Professor SMITH,	
39, <i>American History (Constitutional)</i> ,	Course 64, p. 112
Professor SMITH,	
40, <i>United States since 1860</i> ,	Course 65, p. 112
Professor BOURNE,	
41, <i>Modern European and English Historiography</i> ,	Course 73, p. 114
Professor DUNCAN,	
42, <i>Principles of Logic</i> ,	Course 1, p. 117

UNIVERSITY PRIVILEGES

CLUBS FOR RESEARCH

In various voluntary associations, instructors and students meet periodically for the reading of papers, oral discussions, etc.; such are :

- The CLASSICAL CLUB.
- The MATHEMATICAL CLUB.
- The POLITICAL SCIENCE CLUB.
- The PHILOSOPHICAL CLUB.
- The EDUCATIONAL CLUB.
- The SEMITIC AND BIBLICAL CLUB.
- The BIBLICAL RESEARCH CLUB.
- The MODERN LANGUAGE CLUB.
- The GERMAN JOURNAL CLUB.
- The ROMANCE CLUB.
- The ENGLISH CLUB.
- The PHYSICS JOURNAL CLUB.
- The ENGINEERS' CLUB.
- The CHEMICAL CLUB.
- The HISTORICAL CLUB.
- The PHYSICAL CLUB.
- The GEOLOGICAL CLUB.
- The BIOLOGICAL CLUB.
- The KENT LABORATORY JOURNAL CLUB.
- The ANTHROPOLOGY CLUB.

LIBRARIES AND READING-ROOMS

Students have the free use of all the Libraries of the University. The whole number of volumes in the several libraries of the University is more than 390,000.

The UNIVERSITY LIBRARY contains about 300,000 volumes, and many thousands of unbound pamphlets. Its READING-ROOM contains the books most important for

daily consultation and reference, together with scholarly periodicals, and is open on every week-day from 9 o'clock A. M., for twelve hours. Of current periodical publications, including publications of learned societies, the Library receives an unusually large number,—the foreign serials alone being not less than five hundred.

The LINONIAN AND BROTHERS LIBRARY, occupying the south wing of the old Library building, contains about 24,500 volumes of the best current literature. It is open from 9 A. M. to 5 P. M.

The COLLEGE READING-ROOM receives fifty-six daily newspapers, American and foreign, fifty-four weeklies, and sixty-six other periodicals,—in addition to the periodicals received at the University Library.

The SHEFFIELD SCIENTIFIC SCHOOL LIBRARY is a valuable collection of 7,500 volumes, chiefly mathematical.

The ART SCHOOL LIBRARY contains about 500 volumes of expensive illustrated works.

The TROWBRIDGE REFERENCE LIBRARY in the Divinity School contains 4,000 volumes of works of reference for Biblical study.

The LOWELL MASON LIBRARY in West Divinity Hall contains 4,000 volumes of music.

The Peabody Museum, the Observatory, and the several Laboratories have valuable technical libraries.

The Library of the AMERICAN ORIENTAL SOCIETY, consisting of about 6000 books and manuscripts, is deposited in the University Library building.

Several of the departments of study (the Classical, English, Germanic, Mathematical, Philosophical, Political Science, and Historical) have special libraries of standard works for the use of advanced students.

For a Course of Lectures on the USE OF THE LIBRARY, see page 57.

LABORATORIES, MUSEUMS, AND COLLECTIONS

The Peabody Museum of Natural History.

The Physical, the Chemical, the Biological, and the Engineering Laboratories, and the Eaton Herbarium, of the Sheffield Scientific School.

The Sloane Physical, the Kent Chemical, and the Psychological Laboratories of Yale College.

The collections of the School of Fine Arts.

The collection of coins in the University Library, and various collections of models, casts, and photographs used in the teaching of mathematics and in other departments of instruction.

LECTURES AND CONCERTS

The following courses of public lectures and concerts are open to the students of the University :

The SHEFFIELD LECTURES.

The ART SCHOOL LECTURES, including the Trowbridge Lectures on Art.

The LYMAN BEECHER LECTURES ON PREACHING.

The AMERICAN LECTURES ON THE HISTORY OF RELIGIONS.

The DODGE LECTURES ON THE RESPONSIBILITIES OF CITIZENSHIP.

The BROMLEY LECTURES ON JOURNALISM, LITERATURE, AND PUBLIC AFFAIRS.

The YALE PUBLIC LECTURES.

The DWIGHT HALL LECTURES.

The SYMPHONY ORCHESTRA CONCERTS : six concerts by the New Haven Symphony Orchestra under the direction of Professor Parker.

The UNIVERSITY CHAMBER CONCERTS : four concerts by the Kneisel Quartet of Boston.

(For admission to the above mentioned concerts, the Yale Public Lectures and the Sheffield Lectures, a small fee is charged.)

ORGAN RECITALS: by Professor Jepson in Woolsey Hall on Monday afternoons in the Winter term.

Other public lectures are arranged for by the Phi Beta Kappa Society, the Medical Alumni, the Kent Club of the Law School, the Leonard Bacon Club of the Theological School, and other university organizations.

THE UNIVERSITY CHURCH

The privileges of **THE CHURCH OF CHRIST IN YALE UNIVERSITY** are extended to all students of the University.

PUBLIC WORSHIP is held in the **BATTELL CHAPEL** every Sunday morning at 10.30 o'clock.

YOUNG MEN'S CHRISTIAN ASSOCIATION

The **YOUNG MEN'S CHRISTIAN ASSOCIATION OF YALE UNIVERSITY** is composed of six independently organized Associations in the Academic, Scientific, Graduate, Theological, Law, and Medical Departments of the University. The headquarters of the Association in the Graduate School are in Dwight Hall, on the College Square, which is admirably adapted to be a center of social religious life. The building contains a convenient reading-room, a carefully selected library, an auditorium for general religious services, and separate rooms for the Bible classes and prayer meetings.

The activities of the Association in the Graduate School include aid for new students in securing board and rooms, a social reception in the early autumn, and informal social gatherings on Saturday evenings throughout the year, a Bible class on Sunday noons, and practical Christian work in the missions, Sunday schools, and Boys' Clubs which are controlled by the University.

READING ROOM FOR WOMEN STUDENTS

A reading room at 135 Elm street, in charge of the **WOMAN'S GRADUATE CLUB**, is open to all women studying in the University.

On September 28 to October 1, a member of the **Club** will be at 135 Elm street from 11.00 A. M. to 1.00 P. M. and from 3.00 to 5.00 P. M., for the purpose of rendering any possible service to the new students.

THE INFIRMARY

The **YALE INFIRMARY** is situated on Prospect street in a healthful and beautiful part of the city. It was built in 1892 at a cost of about \$40,000. One dollar is charged on the Treasurer's bill for each day that a student remains in the Infirmary. A competent matron is in residence, but the choice of physician rests with the student.

THE GYMNASIUM

The **GYMNASIUM** is designed to provide all students of the University, not only with opportunities for general exercise, but also with the means of caring for the body in accordance with the laws of hygiene. It also provides for specific training in view of any physical defects that may be remedied by rational superintendence.

The Department is under the supervision of a Director, assisted by two Associate Directors, both of whom are trained physicians.

THE DINING HALL

The **UNIVERSITY COMMONS**, in University Hall, furnishes board at cost (approximating \$4.25 per week). The Hall contains seats for 1,008, and is open to the officers and students of the University. Application for board should be made at the office of the superintendent, Captain S. A. Smoke, at the east end of University Hall.

GRADUATE SCHOOL

LIST OF STUDENTS

IN ATTENDANCE 1904-1905

WITH THEIR MAJOR SUBJECTS OF STUDY

[The major subject of study is stated in each case. Students marked "A." are pursuing courses of study in absence under the direction of the Faculty for the degree of Master of Arts, Mechanical Engineer, or Civil Engineer.]

Anna Heloise Abel, B.A. Kansas University 1898, M.A. 1900	Salina, Kans.	721 Elm st. History
Arthur Adams, B.A. Rutgers College 1902, M.A. Yale University 1903	Ocean City, N. J.	124 Park st. English
Walter Maxwell Adriance, B.A. Yale University 1900, M.A. 1903	St. Louis, Mo.	119 Wall st. Economics
Hubert Hillary Suffern Aimes, PH.B. Yale University 1897	W. Haven, Conn.	267 Orange st. History
Maria Hawes Albee, B.A. Bryn Mawr College 1904	New Haven, Conn.	356 Howard av. Greek
Frederick Charles Aldinger, B.A. Yale University 1904	Pringhar, Iowa	14 Whalley av. Philosophy and History
Charles Roberts Aldrich, B.A. Yale University 1903	El Paso, Tex.	A. English
Clarence Alfred Alexander, LL.B. Yale University 1899	New York City	60 Sylvan av. History and Sociology
Arthur Dwight Allen, B.A. Yale University 1901	Glen View, Ky.	A. Economics
Luther Anderson, B.A. Bethany College 1899, B.A. Yale University 1903, M.A. 1904	Lindsborg, Kans.	310 York st. History
William Gilbert Anderson, M.D. Western Reserve Univ. 1883, B.A. Yale University 1902, M.A. 1903	Cleveland, O.	1187 Chapel st. Physiology
Irving Atwater Andrew, PH.B. Yale University 1903	Orange, Conn.	Orange Chemistry

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|---|---|
| Anna Margaret Arbuckle, B.A.
Grove City College 1904 | <i>New Haven, Conn.</i> 33 Howard av.
English |
| Frances Arnold, B.A.
Knox College 1895,
M.A. Wellesley College 1900 | <i>Galesburg, Ill.</i> 70 Howe st.
English |
| Raymond Harman Ashley, B.S.
Rutgers College 1903 | <i>Bound Brook, N. J.</i> 102 York sq.
Chemistry |
| Herbert Bassett Augur, B.A.
Yale University 1897 | <i>Portland, Oregon</i> A.
History |
| Edward Monroe Bailey, Jr., PH.B.
Yale University 1902 | <i>Middletown, Conn.</i> 297 York st.
Physiological Chemistry |
| Arthur Shinkle Baker, B.A.
Lafayette College 1903,
B.A. Yale University 1904 | <i>New Haven, Conn.</i> 92 Park st.
Latin |
| George Merrick Baker, B.A.
Yale University 1900 | <i>New Haven, Conn.</i> 107 York st.
German |
| Cecil Kittredge Bancroft, B.A.
Yale University 1891 | <i>Andover, Mass.</i> 213 D.
Classics |
| Joseph Austin Bancroft, B.A.
Acadia University 1903,
B.A. Yale University 1904 | <i>Acaciaville, N. S.</i> 569 P.
Geology |
| Kate Grace Barber, B.S.
Rhode Island College 1903 | <i>Carolina, R. I.</i> 136 Division st.
Botany |
| Julian Thomas Barclay, B.A.
Bethany College (W. Va.) 1898, M.A. 1902,
M.A. Yale University 1903 | <i>Bethany, W. Va.</i> 109 York st.
Romance Languages |
| Mary Eleanor Barrows, B.A.
Smith College 1897 | <i>Oberlin, O.</i> 84 Wall st.
English |
| Samuel Eliot Bassett, B.A.
Yale University 1898 | <i>New Haven, Conn.</i> 168 Sheffield av.
Classical Philosophy |
| Gerald Hamilton Beard, B.A.
Yale University 1887, B.D. 1890, PH.D. 1892 | <i>New Haven, Conn.</i> 624 E. D.
Chemistry and Biology |
| Allen Rogers Benham, B.A.
University of Minnesota 1900, M.A. 1901 | <i>St. Paul, Minn.</i> 119 Park st.
English |
| Gilbert Giddings Benjamin, PH.B.
Syracuse University 1899,
M.A. Yale University 1904 | <i>Buffalo, N. Y.</i> 387 Temple st.
History |
| Stephen Alexander Bennett, B.A.
Talladega College 1900,
B.A. Yale University 1904 | <i>Birmingham, Ala.</i> 72 Edgewood av.
Mathematics |

Maxime Lucian Bergeron, B.A. College of City of New York 1903, M.A. Yale University 1904	<i>New York City</i> 124 Park st. Romance Languages
Barnett Berman, LL.B. Yale University 1904	<i>New Haven, Conn.</i> 41 Broad st. English
Mary Florence Berry, B.A. Mt. Holyoke College 1901	<i>Portland, Me.</i> 70 Howe st. Fine Arts
Bernard Barton Bigelow, PH.B. Ohio State University 1903	<i>Findlay, O.</i> 42 Lake pl. Sociology and Economics
Alfred Hoyt Bill, B.A. Yale University 1903	<i>Plainfield, N. J.</i> A. English
Seth Daniel Bingham, Jr., B.A. Yale University 1904	<i>Naugatuck, Conn.</i> 685 W. D. Music
Avard Longley Bishop, B.A. Acadia University 1901, B.A. Yale University 1903, M.A. 1904	<i>Lawrencetown, N. S.</i> 120 York st. Economics
Jacob Foster Bitner, B.A. Franklin and Marshall College 1904	<i>Spring Mills, Pa.</i> 42 Lake pl. Botany
Harold Cornelius Bradley, B.A. University of California 1900	<i>Berkeley, Cal.</i> 2 Hillhouse av. Physiological Chemistry
Walter Minor Bradley, PH.B. Yale University 1899	<i>New Haven, Conn.</i> 1346 Chapel st. Mineralogy
David William Brandelle, B.A. Augustana College 1899, M.A. University of Minnesota 1902	<i>Portland, Conn.</i> 855 State st. History
Mercy Agnes Brann, B.A. Colby College 1897	<i>Dover, Me.</i> Hartford English
Henrietta Foster Brewer, B.A. University of California 1895	<i>Oakland, Cal.</i> 61 Trumbull st. Latin and Greek
Howard Stanley Bristol, PH.B. Yale University 1902	<i>Meriden, Conn.</i> 162 S. L. Chemistry
Ralph Bristol, B.A. Yale University 1903	<i>Ansonia, Conn.</i> A. English and Economics
Herbert Stanley Brown, B.A. Yale University 1881, B.D. 1886	<i>Darien, Conn.</i> Darien Biblical Literature
James Brown, B.A. Yale University 1902, M.A. 1903	<i>Buffalo, N. Y.</i> 230 D. Chemistry
Douglas Lord Bryant, PH.B. Yale University 1903	<i>West Haven, Conn.</i> West Haven Chemistry and Metallurgy

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|---|---|
| Frederick Merwin Burgess, B.A.
Yale University 1897 | <i>New Haven, Conn.</i> 274 Dixwell av.
English |
| Harry Frost Burgess, B.A.
Yale University 1904 | <i>New Haven, Conn.</i> 20 Brown st.
Modern Languages |
| Otto Whitmore Burtner, B.A.
Otterbein University 1898,
B.D. Union Biblical Seminary 1901 | <i>Washington, D. C.</i> 628 E. D.
Biblical Literature |
| Robert Burton, B.A.
Blackburn College 1904 | <i>Carlinville, Ill.</i> 333 York st.
Economics |
| Charlotte Marion Bush, B.L.
Western Reserve University 1898 | <i>West Haven, Conn.</i> West Haven
English |
| William Kernan Camblos, B.A.
St. Joseph's College (Phil.) 1904 | <i>Philadelphia, Pa.</i> 333 York st.
Political Science |
| Edward Herbert Cameron, B.A.
Acadia University 1900,
B.A. Yale University 1903, M.A. 1904 | <i>Yarmouth, N. S.</i> 120 York st.
Philosophy |
| Marian Dickinson Campbell, B.A.
Radcliffe College 1899 | <i>Middlefield, Conn.</i> 331 Temple st.
English |
| Henry Seidel Canby, PH.B.
Yale University 1899 | <i>Wilmington, Del.</i> 3 B. M. H.
English |
| Edward Aloysius Carlin, LL.B.
Yale University 1904 | <i>New Haven, Conn.</i> 215 Davenport av.
History |
| David Hobart Carnahan, B.A.
University of Illinois 1896, M.A. 1898,
M.A. Yale University 1904 | <i>Minneapolis, Minn.</i> Paris, France
French |
| Virginius Nelson Carney, B.A.
Lincoln University 1899,
B.D. Yale University 1904 | <i>Chicago, Ill.</i> 618 E. D.
Philosophy |
| Walter Orestes Cartwright, B.A.
Brown University 1881 | <i>Wallingford, Conn.</i> Wallingford
Philosophy |
| Shirley Jackson Case, B.A.
Acadia University 1893, M.A. 1896,
B.D. Yale University 1904 | <i>Hatfield Point, N. B.</i> 684 W. D.
Biblical Literature |
| Lacey Davis Caskey, B.A.
Yale University 1901 | <i>Southport, Conn.</i> 542 P.
Classics |
| George Dewitt Castor, B.A.
Drury College 1898, M.A. 1903,
B.D. Yale University 1904 | <i>New Haven, Conn.</i> 339 York st.
Biblical Literature |
| George Irwin Chadwick, B.A.
Yale University 1904 | <i>Newton, N. J.</i> 606 E. D.
History |
| Joseph Hayes Chandler, B.A.
Yale University 1877 | <i>Fond du Lac, Wisc.</i> A.
Biblical Literature |

Adelbert Putnam Chapman, B.A. Yale University 1865	Northfield, Conn. Botany	602 E. D.
Muriel Esther Chase, M.A. Bates College 1899	Lewiston, Me. English	70 Howe st.
George Frederic Chatfield, PH.B. Yale University 1903	New Haven, Conn. Chemistry	268 Humphrey st.
Chin-tao Chen, M.S. University of California 1902	Canton, China Economics	127 Howe st.
Raymond Gilmore Clapp, B.A. Boston University 1900, B.D. Yale University 1903, M.A. 1904	South Boston, Mass. Biblical Literature	Germany
Samuel Hopkins Clapp, B.A. Yale University 1901	Pawtucket, R. I. Chemistry	721 W. D
Alexander Ray Clark, Jr., B.A. Yale University 1895	New York City Economics	A.
Harold Terry Clark, B.A. Yale University 1903	Ansonia, Conn. German	A.
Harry Henderson Clark, B.A. Yale University 1903	Winchester, Tenn. Economics	A.
Stephen Carlton Clark, B.A. Yale University 1903	Cambridge, Mass. English	A.
Elizabeth Whittlesey Cleaveland, PH.B. Chicago University 1902	Lakeville, Conn. English	89 Whalley av.
Ralph Oakley Clock, PH.B. Yale University 1901, M.D. University of Pennsylvania 1904	New York City Biology	2 Hillhouse av.
Oliver Eugene Closson, PH.B. Yale University 1903	Meriden, Conn. Physiological Chemistry	466 FW.
Jesse Conklin Coddington, B.D. Yale University 1904	Falls Village, Conn. Biblical Literature	Falls Village
Frederick Sears Coe, PH.B. Yale University 1899	Newark, N. J. Mechanical Engineering	A.
Charles Edward Cory, PH.B. Drake University 1901, M.A. 1902, M.A. Yale University 1903	Des Moines, Iowa Philosophy	14 Whalley av.
Henry Carleton Courten, B.A. Yale University 1904	Palmyra, N. Y. Physiological Chemistry	387 Temple st.
Donald John Cowling, B.A. Lebanon Valley College 1902, B.A. Yale University 1903, M.A. 1904	Scottdale, Pa. Philosophy	692 W. D.

- William Bronson Cramer, PH.B. *New Haven, Conn.* 147 Dwight st.
Yale University 1902 Chemistry
- Alfred Miller Cressler, B.A. *Fort Wayne, Ind.* A.
Yale University 1902 English
- David Raymond Curtiss, B.A. *New Haven, Conn.* 220 Lawrence st.
University of California 1899, M.A. 1901, Mathematics
PH.D. Harvard University 1903
- Frank William Cushwa, B.A. *Martinsburg, W. Va.* Wallingford
West Virginia University 1902, M.A. 1903, English
M.A. Harvard University 1904
- Haroutune Mugurdich Dadourian *Tarsus, Asia Minor* 131 High st.
B.A. St. Paul's Institute, Tarsus, Physics
PH.B. Yale University 1903
- William Enright Davenport, B.A. *Bridgeport, Conn.* Bridgeport
Yale University 1899 Music
- Carl Willis Davis, B.A. *Hartford, Conn.* A.
Yale University 1902 English
- Sidney Norton Deane, B.A. *Northfield, N. Y.* Athens, Greece
Yale University 1902 Classics
- Charles Franklin Dike, PH.B. *Crystal Lake, Ill.* 114 High st.
Yale University 1904 Mining Engineering
- William Le Roy Dix, B.A. *Ossining, N. Y.* A.
Yale University 1902 English
- Loring Holmes Dodd, B.A. *New Haven, Conn.* 82 Admiral st.
Dartmouth College 1900, English
M.A. Columbia University 1901
- Arthur Douglas Dodge, B.A. *Simsbury, Conn.* A.
Yale University 1903 English
- Samuel William Dudley, PH.B. *New Haven, Conn.* 671 W. D.
Yale University 1900, M.E. 1903 Mechanical Engineering
- Marcus Homer Duncan, B.A. *Wylie, Texas* 291 Norton st.
Baylor University 1899, Economics and Political Science
B.A. Yale University 1902
- Edward Lewis Durfee, B.A. *New Haven, Conn.* 95 Cottage st.
Yale University 1896 History
- Willard Higley Durham, B.A. *Holland Patent, N. Y.* 716 W. D.
Yale University 1904 English

Alba M. Edwards, B.A. University of Oklahoma 1903	Norman, Okla. Social Science	706 W. D.
Richard Ellis, B.A. Yale University 1885, M.D. New York University 1888	New York City Latin	A.
Clara Eliza Emerson, B.A. Wellesley College 1891	Beloit, Wisc. English	89 Whalley av.
Henry Bridges Endicott, PH.B. Yale University 1904	Swarthmore, Pa. Sanitary Engineering	126 Wall st.
Ida Josephine Everett, B.L. Mt. Holyoke College 1893	Norwood, Mass. English	32 Howe st.
Oscar Robert Olsen Farel, B.A. Denison University 1902	Forest City, Iowa Philosophy and Sociology	655 W. D.
William Oliver Farnsworth, B.A. Harvard University 1893, M.A. 1894	New Haven, Conn. Romance Philology	52 Grove st.
Mansfield Ferry, B.A. Yale University 1903	Cambridge, Mass. English	A.
Charles Paxson Flora, B.A. Yale University 1902	Columbia, Pa. Chemistry	Kent Lab'y
Joseph Fogelberg, B.A. Bethany College 1899	Lindsborg, Kans. German	128 Wall st.
Edmund Clark Forsythe, B.A. Colgate University 1904	Little Falls, N. Y. History	57 Court st.
Charles Root Fowler, B.A. Yale University 1899	New Haven, Conn. Music	851 Chapel st.
George Levi Fox, B.A. Yale University 1874, LL.B. 1879, M.A. 1885	New Haven, Conn. Latin and Greek	7 College st.
Arthur James Gammack, B.A. Trinity College, Toronto, 1891, M.A. 1902	West Haven, Conn. Biblical Literature	West Haven
Maxwell Ganter, B.A. Kenyon College 1904	Akron, O. English	1161 Chapel st.
Robert Banks Gibson, PH.B. Yale University 1902	New Haven, Conn. Physiological Chemistry	18 Trumbull st.
Arthur Harmount Graves, B.A. Yale University 1900	Hartford, Conn. Botany	91 Grove st.
Arthur Llewellyn Griffiths, B.A. Yale University 1901	Squirrel Island, Me. English	A.

- Albert Edward Gubelman, B.A. *Rochester, N. Y.* 279 Crown st.
University of Rochester 1897, M.A. 1900, German
M. A. Yale University 1902
- Ernest Graham Guthrie, B.A. *Dunedin, N. Z.* 680 W. D.
University of New Zealand 1900, M.A. 1901, Biblical Literature
B.D. Yale University 1904
- Ernest Hawley Haig, B.L. *Devil's Lake, N. D.* 711 W. D.
Carleton College 1901 Biblical Literature
- William James Hail, B.A. *Wakayama, Japan* 695 W. D.
Missouri Valley College 1899, Church History
B.D. Yale University 1904
- Will Taliaferro Hale, B.A. *Mobile, Ala.* 693 W. D.
Vanderbilt University 1902, M.A. 1902 Biblical Literature
- Lars Johan Evald Hallander *Sköfde, Sweden* 65 Lyon st.
Nya Elementarskolan, Stockholm 1891, German
Upsala University, Sweden 1893,
M.A. Yale University 1904
- Alice Bradford Hammond, B.A. *New Haven, Conn.* 43 Orchard st.
Bryn Mawr College 1898 Latin
- William Allen Harper, B.A. *Elon College, N. C.* 539 Elm st.
Elon College 1899, Latin
M.A. Yale University 1904
- Herman Fermain Harris, B.A. *Columbia, Mo.* Mem. Hall
University of Wooster 1894, M.A. 1897 Classics
- Isaac Faust Harris, B.S. *New Haven, Conn.* 123 Huntington st.
University of North Carolina 1900, M.S. 1903 Physiol. Chemistry
- Ernest Hausberg, B.A. *Charles City, Iowa* A.
Yale University 1901 English
- George Edmund Haynes, B.A. *Hot Springs, Ark.* 665 W. D.
Fisk University 1903, Social Science
M.A. Yale University 1904
- Laurent Heaton, B.A. *Poughkeepsie, N. Y.* A.
Yale University 1902 Electricity
- Constans Alexis Hembury, B.A. *Moline, Ill.* 1161 Chapel st.
Augustana College 1899, English
Ph.B. University of Michigan 1900, M.A. 1901
- Samuel Burdett Hemingway, B.A. *New Haven, Conn.* 327 Temple st.
Yale University 1904 English
- Esther Hemphill, Ph.B. *South Charleston, O.* 45 Lake pl.
University of Wooster 1903 Philosophy

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| Arthur Frederic Hertell, B.A.
Doane College 1889, M.A. 1892,
A.D. Lutheran Seminary 1895,
M.A. Yale University 1904 | <i>Macomb, Ill.</i> 333 York st.
History |
| Frederick William Heyl, PH.B.
Yale University 1904 | <i>New Haven, Conn.</i> 106 Wooster st.
Chemistry |
| John Joseph Higgins, B.A.
Yale University 1898 | <i>New Haven, Conn.</i> 569 Grand av.
Chemistry |
| Albert Hileman, B.A.
Yale University 1903 | <i>Frankstown, Pa.</i> 606 E. D.
Chemistry |
| Raymond Thompson Hill, B.A.
Yale University 1904 | <i>Branford, Conn.</i> 202 D.
Romance Languages |
| Gay Hills, B.A.
Dartmouth College 1904 | <i>Swansey, N. H.</i> 25 Whalley av.
Botany |
| Robert Taylor Hinton, M.A.
Georgetown College (Ky.) 1899,
B.A. Yale University 1900 | <i>Paris, Ky.</i> 1233 Chapel st.
Biology and Geology |
| Ichiro Hirano, B.A.
Keiogijiku University 1902 | <i>Tokyo, Japan</i> 1161 Chapel st.
Economics |
| Jiunnosuke Hitomi, B.A.
Waseda University 1896 | <i>Kyoto, Japan</i> 378 Crown st.
Political Economy |
| Harry Oliver Hofstad, B.A.
Yale University 1903,
M.A. University of Michigan 1904 | <i>No. Anson, Me.</i> 689 W. D.
Sociology and History |
| Melvin Tilden Holbrook, B.A.
Yale University 1899 | <i>So. Byfield, Mass.</i> A.
Classics |
| Francis Jerome Holder, B.S.
National Normal University 1896 | <i>Lacrosse, Fla.</i> Mem. Hall
Mathematics |
| Lucius Hudson Holt, B.A.
Yale University 1902, M.A. 1904 | <i>Hartford, Conn.</i> 1568 Chapel st.
English |
| Roy Mac Houghton, B.A.
Olivet College 1902 | <i>Lainsburg, Mass.</i> 704 W. D.
English and Biblical Literature |
| James Ashworth Howarth, LL.B.
Yale University 1896 | <i>New Haven, Conn.</i> 34 Vernon st.
Botany |
| Albert Kemp Hubbard, PH.B.
Yale University 1901 | <i>Kane, Pa.</i> A.
Civil Engineering |
| Albert S. Hurst, B.A.
University of Toronto 1899,
M.A. Yale University 1904 | <i>Morpeth, Ontario</i> Bridgeport
Philosophy |
| Frederick William Hudson Jacomb, B.A.
University of Toronto 1896, M.A. 1898 | <i>Guelph, Ontario</i> 153 Dwight st.
Botany |

D L James, B.A. Yale University 1902	<i>Kansas City, Mo.</i> Modern Languages	A.
Hopkin Jenkins, B.A. Yale University 1900, LL.B. Univ. Oregon 1902	<i>Portland, Oregon</i> History	A.
Carl Oscar Johns, B.A. Bethany College 1899, M.A. 1902, PH.B. Yale University 1904	<i>Paterson, N. J.</i> Chemistry	162 S. L.
William Savage Johnson, B.A. Yale University 1900	<i>Meriden, Conn.</i> English	122 Howe st.
Donald Kent Johnston, B.A. Yale University 1903	<i>New York City</i> Sociology	A.
John Francis Johnston, PH.B. Illinois Wesleyan University 1898, M.A. 1901, PH.D. 1902	<i>Glencoe, Canada</i> Biblical Literature	Yale Station
Daniel Edwards Kennedy, B.A. Yale University 1903	<i>Nashua, N. H.</i> English	A.
Martha Mason Kennerly, B.S. Adelphi College 1903	<i>White Post, Va.</i> Biology	45 Lake pl.
Andrew Keogh, M.A. Yale University 1904	<i>New Haven, Conn.</i> Modern Languages	751 George st.
Edwin Burruss King, B.A. Yale University 1898	<i>Southboro, Mass.</i> English	A.
Junichiro Kinoshita, B.L. Meiji University 1878, Doshisha College 1897	<i>Tokyo, Japan</i> Social Science	919 Howard av.
Lucian Swift Kirtland, B.A. Yale University 1903	<i>Poland, O.</i> English	A.
Arthur Potter Knight, PH.B. Yale University 1901	<i>Rome, N. Y.</i> Sanitary Engineering	A.
Joseph Lehn Kreider, B.S. Lebanon Valley College 1902	<i>Annaville, Pa.</i> Chemistry	Kent Lab'y
Sadajiro Kumitani Doshisha College 1904	<i>Kyoto, Japan</i> Economics	6 Trumbull st.
Beverly Waugh Kunkel, PH.B. Yale University 1901	<i>Harrisburg, Pa.</i> Biology	720 W. D.
George Herbert Lamson, Jr., B.S. Boston University 1903	<i>East Hampton, Conn.</i> Entomology	64 Lake pl.
William Gilbert Lathrop, B.A. Brown University 1889, B.D. Yale University 1892	<i>Shelton, Conn.</i> Social Science	Shelton

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| Ellis Earl Lawton, B.S.
University of Rochester 1902 | <i>Syracuse, N. Y.</i> 120 York st.
Physics |
| Floyd Swallow Leach, B.A.
Wesleyan University 1902 | <i>Chinchilla, Pa.</i> 645 E. D.
Bibl. Lit. and Semit. Lang. |
| Bertram Augustus Lenfest, B.S.
Mass. Institute Technology 1890 | <i>New Haven, Conn.</i> 217 English st.
Philosophy |
| Frederick Lent, B.A.
Brown University 1900, M.A. 1901,
B.D. Newton Theol. Institute 1900 | <i>New Bedford, Mass.</i> 177 Lawrence st.
Biblical Literature |
| Louis Henry Levy, PH.B.
Yale University 1904 | <i>New Haven, Conn.</i> 138 Minor st.
Chemistry |
| Dudley Payne Lewis, B.A.
Yale University 1903 | <i>New York City</i> A.
Biblical Literature |
| Edwin Colby Lewis, B.A.
Yale University 1901 | <i>St. Johnsbury, Vt.</i> A.
Economics |
| William Albert Lilley, Jr., PH.B.
Yale University 1903 | <i>New Haven, Conn.</i> 37 College st.
Mechanical Engineering |
| Gerald Francis Loughlin, B.S.
Mass. Institute Technology 1903 | <i>Boston, Mass.</i> 73 Lake pl.
Geology |
| Herman Samuel Lovejoy, B.S.
Dartmouth College 1894 | <i>Branford, Conn.</i> Branford
Philosophy |
| George Blakeman Lovell, B.A.
Yale University 1901, M.A. 1903 | <i>New Haven, Conn.</i> 91 Dwight st.
Pedagogy |
| Lewis Davies Lowe, B.A.
Emory College 1899,
B.D. Vanderbilt University 1903, M.A. 1904 | <i>Lavonia, Ga.</i> 612 E. D.
Philosophy |
| Frederick Ludwig Hermann von Lubken, B.A.
Oberlin College 1902 | <i>New York City</i> 135 College st.
English and Biblical Literature |
| Frederick Bliss Luquiens, B.A.
Yale University 1897 | <i>New Haven, Conn.</i> 201 Bishop st.
Romance Languages |
| Huc Mazelet Luquiens, B.A.
Yale University 1902 | <i>New Haven, Conn.</i> Paris, France
Fine Arts |
| Willard Blackinton Luther, B.A.
Yale University 1902 | <i>Providence, R. I.</i> A.
English |
| Helen Mowry Lyman, B.A.
Mt. Holyoke College 1901 | <i>West Brookfield, Mass.</i> 90 Whalley av.
Education |
| Thomas McCandless, B.A.
Yale University 1900, B.D. 1903 | <i>Aiken, S. C.</i> A.
Semitic Languages |

- Raymond Benedict McClenon, B.A. *Brookings, S. D.* 366 Whalley av.
Yankton College 1902 Mathematics
- Elmer Verner McCollum, B.A. *Lawrence, Kans.* 285 Willow st.
University of Kansas 1903, M.A. 1904 Chemistry
- George Grant MacCurdy, B.A. *New Haven, Conn.* 237 Church st.
Harvard University 1893, M.A. 1894 Anthropology
- Ernest Frank McGregor, B.A. *Avon, Conn.* 684 W. D.
University of Minnesota 1901, Social Science
B.D. Yale University 1904
- John Graham McIvor, M.A. *Halifax, N. S.* 688 W. D.
University of Glasgow 1883, B.D. 1885 Biblical Literature
- Mary Elizabeth MacLean, PH.B. *Oakland, Cal.* 83 Grove st.
University of California 1889 English
- Charles Bell McMullen, B.A. *Tarkio, Mo.* 64 Lake pl.
Tarkio College 1894, Philosophy
B.A. Princeton University 1896, M.A. 1901, B.D. 1901
- Albert Alonzo Madsen, B.A. *Grand Rapids, Wisc.* 682 W. D.
Moravian College 1900, B.D. 1902, Bibl. Lit. and Semit. Lang.
B.D. Yale University 1903, M.A. 1904
- Elizabeth Wheeler Manwaring, B.A. *Bridgeport, Conn.* Bridgeport
Wellesley College 1902 English
- Harriette Parnal Marsh, PH.B. *New Haven, Conn.* 89 Whalley av.
University of Chicago 1904 History
- Herbert Martin, B.A. *Lexington, Ky.* 102 DeWitt st.
Kentucky University 1899, M.A. 1900 Philosophy
- Roy Murdoch Mason, B.A. *New York City* A.
Yale University 1902 English
- Ralph Nelson Maxson, B.S. *Westerly, R. I.* 387 Crown st.
Rhode Island State College 1902 Chemistry
- Colton Maynard, B.A. *Washington, D. C.* Cheshire
Yale University 1901, M.A. 1904 History and English
- Clarence Whittlesey Mendell, B. A. *Roxbury, Mass.* 75 S. W.
Yale University 1904 ● Greek
- Antonio Mendoza, PH.B. *Havana, Cuba* 88 Wall st.
Yale University 1903 Chemistry and Engineering
- George Albert Menge, PH.B. *New Haven, Conn.* 114 Howe st.
Yale University 1903 Chemistry
- Ernest Loren Meritt, B.A. *West Eaton, N. Y.* 435 Elm st.
Wesleyan University 1891, Greek
M.A. Yale University 1903

Walter Eugene Meyer, B.A. Yale University 1901, LL.B. Harvard University 1904	New York City English A.
Arthur Dorland Miles, PH.B. Yale University 1904	New Carlisle, Ind. 98 York sq. Mineralogy and Geology
Hiram Miller, PH.B: Yale University 1901	Middlefield, Conn. Sanitary Engineering A.
John Milton Miller, B.A. Yale University 1904	Bridgeport, Conn. 72 S. M. Physics and Mechanical Engineering
Stewart Lea Mims, B.A. Yale University 1904	Durham, N. C. 716 W. D. History
Tadasu Misawa, B.A. Tokyo Imperial University 1904	Hyuga, Japan 105 Park st. Philosophy
Philip Henry Mitchel, PH.B. Yale University 1904	South Britain, Conn. 98 York sq. Physiology and Physiol. Chemistry
Seth Enoch Moody, B.S. Dartmouth College 1898, M.S. Yale University 1904	Agency, Iowa 143 Dwight st. Chemistry
Frank Wood Moore, B.A. Yale University 1903	Elizabeth, N. J. Dwight Hall Modern Languages
Henry Thomas Moore, B.A. Missouri University 1903, M.A. 1904	Carrollton, Mo. Mem. Hall Romance Languages
Sydney Luard Moore, B.A. Princeton University 1904	New Haven, Conn. 22 Whalley av. Botany
James Caddall Morehead, B.A. Roanoke College 1898, M.A. 1899, M.S. Princeton University 1900	Salem, Va. 310 York st. Mathematics
Alfred Lee Morgan, B.A. Oberlin College 1900	Wilton, Conn. 933 Elm st. Economics and Social Science
Russell Mott, B.A. Yale University 1901, LL.B. Harvard University 1904	Michigan City, Ind. English A.
Harry Sylvester Mullens, PH.B. Wadsworth Military College 1902	New York City 59 Grove st. Social Science
Herbert Spencer Murch, B.A. University of Oregon 1898, M.A. Yale University 1903	Coburg, Oregon 1233 Chapel st. English
Suyekichi Nakagawa Tokyo Semmon Gakko 1899	Tokyo, Japan 330 Crown st. Economics

Louis Philip Nash, M.A. Amherst College 1901	<i>Holyoke, Mass.</i>	Holyoke Philosophy
George Henry Nettleton, B.A. Yale University 1896, PH.D. 1900	<i>New Haven, Conn.</i>	339 Prospect st. Modern Languages
Elise NeuenSchwander, B.A. Kansas State University 1898, M.A. 1904	<i>Wakeeney, Kans.</i>	723 Elm st. Romance Languages
Howard Douglas Newton, B.S. Boston University 1904	<i>Interlaken, Mass.</i>	42 Lake pl. Chemistry
George Elwood Nichols, B.A. Yale University 1904	<i>New Haven, Conn.</i>	565 P. Botany
Watson Nicholson, B.A. Leland Stanford Junior Univ. 1892, M.A. Harvard University 1895, PH.D. Yale University 1903	<i>New Haven, Conn.</i>	341 Crown st. English
Wallace Notestein, B.A. University of Wooster 1900, M.A. Yale University 1903	<i>Wooster, O.</i>	1233 Chapel st. History
Keiichi Okami Japanese Peers College 1903	<i>Tokyo, Japan</i>	925 Howard av. Economics
Masakumi Okudaira Japanese Peers College 1903	<i>Tokyo, Japan</i>	159 York st. Economics
Herbert James Ord, PH.B. Yale University 1904	<i>Yonkers, N. Y.</i>	126 Wall st. Civil Engineering
Mary Annie Pace, B.L. Baylor University 1899, PH.M. University of Chicago 1902	<i>Temple, Texas</i>	131 Dwight st. Philosophy
Andrew Dickson Packer, B.A. Yale University 1902	<i>Brooklyn, N. Y.</i>	A. English
Elisabeth Hatch Palmer, B.A. Wellesley College 1887	<i>Ipswich, Mass.</i>	445 George st. Greek and Latin
William White Wilson Parker, B.A. Yale University 1893	<i>Washington, D. C.</i>	A. History
Julius Hall Parmelee, B.A. Yale University 1904	<i>New Haven, Conn.</i>	202 D. Economics
Clarence Curtiss Perry, PH.B. Yale University 1904	<i>New Britain, Conn.</i>	686 W. D. Electrical Engineering
Walter Hart Perry, B.A. Yale University 1901	<i>Oxford, Conn.</i>	Oxford History and Political Science
Conrad Albin Peterson, B.A. Augustana College 1901, M.A. Yale University 1903	<i>Arlington, N. J.</i>	855 State st. History

Lemuel Gardner Pettee, B.A. Yale University 1898	<i>Simsbury, Conn.</i> Economics	A.
Frederick Erastus Pierce, B.A. Yale University 1904	<i>So. Britain, Conn.</i> 1076 Chapel st. English	
Albert Halsey Pierson, B.A. Princeton University 1897	<i>East Orange, N. J.</i> 42 Lake pl. Botany	
Frank Wesley Pitman, PH.B. Yale University 1904	<i>New Haven, Conn.</i> 119 Gilbert av. History	
Henry Burton Pomeroy, B.A. Yale University 1903	<i>New York City</i> English	A.
George French Porter, B.A. Yale University 1903	<i>Chicago, Ill.</i> English	A.
Sylvester David Powell, B.A. Yale University 1901, M.A. 1902	<i>Bridgeport, Conn.</i> 105 Dwight st. History	
Joseph Dyer Prigmore, B.A. Missouri Valley College 1901, B.D. Yale University 1904	<i>Milton, Conn.</i> 695 W. D. Church History	
Albert Hutchinson Putney, B.A. Yale University 1893, LL.B. Boston University 1895	<i>Chicago, Ill.</i> History	A.
Walter Kern Rainsford, B.A. Harvard University 1903	<i>New York City</i> 182 Mansfield st. Botany	
David Lindsey Randall, B.A. Yale University 1904	<i>Athol, Mass.</i> 606 E D. Chemistry	
John Dougan Rea, B.A. Earlham College 1902, B.A. Yale University 1903	<i>Richmond, Ind.</i> Farmington Classics	
Arthur Davis Read, B.A. College of Emporia 1903	<i>Emporia, Kans.</i> 22 Whalley av. Botany	
Arthur Bernhard Recknagel, B.A. Yale University 1904	<i>Brooklyn, N. Y.</i> 94 Division st. Botany	
Harry Izard Bacon Rice, B.A. Yale University 1904	<i>Coles Ferry, Va.</i> 139 Dwight st. Mathematics	
John Pierrepont Rice, B.A. Yale University 1900, M.A. 1901	<i>New Haven, Conn.</i> 431 FW. Romance Languages	
Roland George Dwight Richardson, B.A. Acadia University 1898, B.A. Yale University 1903, M.A. 1904	<i>Lawrencetown, N. S.</i> 120 York st. Mathematics	
Isaac Woodbridge Riley, B.A. Yale Univ. 1892, B.D. 1896, M.A. 1898, PH.D. 1902	<i>New York City</i> 77 Elm st. Philosophy	

DeWyat Rahn Riser, B.A. Newberry College 1901	Leesville, S. C. Latin and Greek	64 Lake pl.
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| William Almor Spinney, B.A.
Colgate University 1877, M.A. 1880 | <i>Wallingford, Conn.</i> Wallingford
Biblical Literature |
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Brown University 1897,
M.A. Harvard University 1899 | <i>Storrs, Conn.</i> Storrs
Biblical Literature |

- Joannes Gabriel Statiropoulos, B.A. *Angora, Turkey* 153 Franklin st.
Anatolia College 1899, Chemistry
M.S. Yale University 1904
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Augsburg Seminary 1898, Semitic Languages
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University of Wooster 1900 History
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Bates College 1882, Meteorology and Physics
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Yale University 1901, C.E. 1904 Civil Engineering
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University of Michigan 1894, History
M.A. Leland Stanford Jr. Univ. 1895,
PH.D. Yale University 1904

Maud Thompson, B.A. Wellesley College 1901, M.A. 1902	New York City	131 Howe st. Greek
Wilmot Haines Thompson, Jr., B.A. Yale University 1898, M.A. 1902	New Haven, Conn.	35 Clark st. Classics
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Brownlee Robertson Ward, B.A. Yale University 1888, PH.B. 1889, PH.D. 1904, M.D. Columbia University 1892	New Haven, Conn.	231 York st. History
Freeman Ward, B.A. Yale University 1903	Yankton, S. D.	569 P. Botany and Geology
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Charles Milnor Washington, B.A.	<i>Locust, N. J.</i>	724 W. D.
Yale University 1889, LL.B. 1895, M.A. 1901	Sanskrit	
Samuel Gookin Waterman, B.A.	<i>Southport, Conn.</i>	A.
Yale University 1892	Geology	
Ernest Charles Webster, PH.B.	<i>Litchfield, Conn.</i>	132 Wall st.
Yale University 1904	Civil Engineering	
Luther Cornelius Weeks, B.S.	<i>Lindsborg, Kans.</i>	310 York st.
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Lehigh University 1904	English	
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University of New Brunswick 1902, B.A. Harvard University 1903	Economics	
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Syracuse University 1894, M.A. 1897	Pedagogy	
Ogden Watson White, B.A.	<i>Waterbury, Conn.</i>	A.
Yale University 1901	English	
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Brown University 1902, M.A. 1903	Biblical Literature	
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Wesleyan University 1899	English	
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Talladega College 1901	Philosophy and Sociology	
Arthur Baldwin Williams, Jr., B.A.	<i>New York City</i>	A.
Yale University 1898	Philosophy	

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Kaiei Yamasaki Keiogijiku University 1901, M.A. Yale University 1902	Tokyo, Japan Philosophy	925 Howard av.
Lester William Zartman, B.A. University of Illinois 1903	Champaign, Ill. Economics	2 University pl.
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Clinton Frederick Zerweck, B.A. Muhlenberg College 1902, M.A. Yale University 1904	Bethlehem, Pa. English	115 Howe st.
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